



DE GNOMONE
MERIDIANO

BONONIENSI

AD DIVI PETRONII

*Deque observationibus Astronomicis eo instrumento
ab ejus constructione*

AD HOC TEMPUS PERACTIS

AUCTORE

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BONONIAE MDCCXXXVI.

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1 166

NOBILISSIMIS VIRIS
MARCHIONI ALOYSIO ALBERGATO
PRÆSIDI PERPETUO
COMITI FRANCISCO Mariæ SIGNIO
COMITI PAULO PATRICIO ZAMBECCARIO
MARCHIONI HIERONYMO COSPIO
MARCHIONI SIGISMUNDO MALVETIO
COMITI SIGHIZZO BLANCHETTO
BONONIÆ SENATORIBUS
DIVI PETRONII BASILICÆ PRÆFECTIS

EUSTACHIUS MANFREDIUS S. P. D.



NON fuit mihi ambigendum cui potissimum opusculum bocce meum inscriberem, jam enim annos ab hinc fere quadraginta cum illud adornare cepi tacito quoddam animi mei iudicio Vobis (Viri nobilissimi) addixeram ac nuncupaveram, ratus ea re non tam officium a me Vobis præstari quam debitum quoddam persolveri. Agitur enim in hoc libro de meridiana illa linea

nea quam Antecessores Vestri magno celestis disciplina commodo in nobilissima civitatis basilica, cujus procurationem geritis, statuerunt, ac summo deinceps studio expendendam, reintegrandam, ornandam curarunt; cui instrumento non civis modo, sed exteri etiam, quotquot astronomiam colunt, maximos hujusce artis progressus acceptos referunt. Ejus ergo instrumenti, atque adeo perpetuae Vestrae erga optimas disciplinas voluntatis historiam servari ad neminem magis quam ad Vos attinet; quam equidem historiam cum Viri celebres Joannes Dominicus Cassinus, Dominicus Gulielminus absolutissimis commentariis a se conscriptam Vobis obtulerint, aliqua tamen fiet illi ex hoc libro accessio, in quo non tam operis descriptionem (quod illi praestiterunt) quam ejus usum, atque utilitates inde perceptas sum prosecutus. Non modo enim observationes quae hac linea a primis ejus temporibus peractae fuerant recensui, sed multo plures adjeci quas ipse per me vel per socios habui, quippe qui, ut primum hac studia attigi id mihi sumpsit ut perpetua (quoad fieri posset) earum observationum series extaret. Id ergo totum, qualecumque est, si Vobis (Viri summi) acceptum fuisse cognovero & ego curam eandem persequar quoad vivam, & ad immortalia illa quibus amplissimus ordo vester me fratresque meos exornavit beneficia novus quidam ac maximus ab humanitatis Vestrae testimonio cumulus accedet. Valete

Kalendis Juliis MDCCXXXV.

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DE GNOMONE BONONIENSI

A C

MERIDIANIS

OBSERVATIONIBUS

EO HABITIS.

TRaditurus earum observationum seriem, quæ hoc Bononiensi gnomone a prima ejus constructione in hunc diem octoginta annorum spatio a viris celeberrimis habitæ, a me vero summo studio conquistæ ordinatæque sunt, rem non modo legentibus gratam, sed plane necessariam futurum me existimavi si initio de gnomonis ipsius fabrica atque usu, tum de multiplici ejus examine ac restitutione, postremum de ea quæ ab hisce observationibus in rem astronomicam promanavit, aut promanare adhuc poterit utilitate paucis verba facerem. Quamquam enim & pleraque ex his quæ sum dicturus e recentiorum astronomorum libris, in quibus frequens meridianæ hujusce lineæ est commemoratio, peti poterant, & vero summus ipse astronomus Joannes Dominicus Cassinus, tam præclari instrumenti artifex accuratam ejus descriptionem justo opere est complexus, tamen neque ullus exitit qui ea attingeret, quæ ad postremos hosce annos pertinent, neque ex legentium commodo futurum videbatur si ad harum observationum rationem omnem, percipiendam aliorum librorum adjumento indigerent. Id autem eo libentius facere institui quod ejusmodi enarratio cum quadam restauratæ hoc & superiore sæculo astronomiæ historia erit conjuncta. Pleraque enim circa Solis motuum difficultates, quæ veteribus moram injecerant, hocce instrumento (quippe omnium quæ uspiam astronomos tractare noverim maximo) sublata, diremptæque sunt; ac facile etiam inducor ut credam quæcumque ad summam in hoc negotio subtilitatem desiderari adhuc videntur ejusdem præsertim subsidio inventum, ac perfectum iri, si modo in ea indagine antecessorum solertiam posterius æmulentur.

A

Ca.

CAPUT PRIMUM.

De prima instrumenti constructione.

Templum est Bononiæ Divo Petronio Civitatis Episcopo ac Patrono sacrum, ante annos 340 in ipso fori conspectu publica auctoritate exstructum, opere ac magnitudine in paucis Italiæ spectabile. Procuratio ædis penes Senatum est, proventus ex publico attributi, quos quinqueviri biennales una cum præside perpetuo e patrum ordine adlecti administrant. Longitudo templi, quàm nunc ab intimo odei recessu porrigitur ad valvas, quæ in forum spectant, pedum est Bononiensium 335; latitudo pedum eorundem 105 præter ædículas, quæ utrimque exituorum projectæ pedes 46 ad eam mensuram adjiciunt (Ichnographiam subiecta huic libro tabula exhibet) Symetria est ejusmodi uti in ea, quamquam ex mediæ ætatis barbarie profecta, neque dignitatem, neque venustatem quandam desideres. Octogonæ columnæ ædis totius spatium in tria ambulacra (naves vocant) secundum longitudinem dirimunt, quibus navibus totidem a foro januæ respondent. Medianæ navis altitudo ex testudinum umbilicis ad pavementum pedum est circiter 120, reliquarum pedum amplius septuaginta. Necdum tamen tanta hæc moles ad architecti exemplum est absoluta, quæ si aliquando absolvatur, vix ullæ erit, opinor, basilica quæ cum hac amplitudine contendat. Itaque & celeberrimis Romanorum Pontificum, Regum, ac principum virorum, conventibus nobilitata est, & in ea Carolus V. Cæsar a Clemente VII. summo Pontifice in maxima Europæ frequentia Romani imperii insignia suscepit.

Ceterum ædificiæ ad cæli plagas is est positus ut fronte septentriones, postico austrum spectet, ac propterea fere secundum meridianum in longum tendatur, modice scilicet (quippe gradus omnino tredecim) ex cardine boreo in ortum deflexum. Propter hæc opportunitates cum de æquinoctiis restituendis, ac universa anni Juliani ratione emendanda, Gregorio XIII. Pontifice, rumor increbuisse; Egnatius Dantes Bononiensis gymnasii mathematicus auctor fuit uti in hac æde regula marmorea sterneretur, quo immisso per sublime foramen Solis radio annuæ ejus conversiones, earumque articuli observando expendere. Neque tamen eam regulam in ipsa meridiani directione statui laboravit, neque vero in partes distribuit, aut ad perpendiculi mensuram exegit, quippe qui solstitiorum tantummodo tempora ex maximo, aut minimo solaris imaginis ad verticem accessu perferutari satis duxit; atque hoc pacto hybernum solstitium anni 1576 in diem 11 Decembris incidisse comperit. Extat adhuc in navi orientali ejus lineæ vestigium octonis ut minimum gradibus a meridio in ortum declinans. Foramen erat in lamina ante fenestram in summo pariete meridionali, qui paries id temporis fuit ædis

ædis posticus. Verum anno 1653 productio meridiem versus ædificio, novæ que Fornice ad priores quinque adjecto, paries ille est dirutus, neque Egnatii linea usui deinceps fuit.

Ex eo itaque tempore de gnomone alio subrogando agitatum est. Plerique Egnatianam regulam ipsam in spatium ex novo adjectum simili positu transferendam, ac Solis radium per parietem recens constructum excipiendum censebant. Contra Joannes Dominicus Cassinus qui Bonaventuræ Cavalerio ante biennium suffectus mathesim publice profitebatur, Solem ex ipsa potius testudine, quippe parietibus sublimiori, admittendum sentiebat, ac lineam in meridiano describendam, quam toto anno irradiaret; hoc enim pacto, dimensis ad perpendicularum lineæ partibus quas solis imago quotidie attingeret, præstantissimum instrumentum paratum iri, quo minimæ quælibet motus differentię arque inæqualitates distingui possent. Verum huic rei cum multæ intercedebant difficultates tum in primis obliquus ille Ædis ad meridianum positus obfistere judicabatur. Quicumque enim sive in mediana sive in altera laterali concameratione locus eligeretur unde Solem tam modicam fore meridianæ lineæ ad columnarum lineam inclinationem, uti per intercolumnium inoffensis basibus transduci non posset; atque eam videlicet Danti fuisse ajebant causam cur ex obliquo priorem illam lineam statuisset.

Erat hæc sane res in summa mensurarum subtilitate posita. Cathinus primum exquisitis observationibus per eas horas habitis quibus horis Sol ipsam ædis frontem stringeret certissime comperit quo angulo parietes, atque adeo columnarum directiones ad meridianum inclinarentur. Dein ducta lineæ quæ columnarum duarum proximarum bases alternatim tangeret, angulum est dimensus, quem lineæ hæc cum ea comprehenderet, quæ per basem centra duceretur; quem angulum ubi priore illo aliquanto minorem reperit, audacter fortasse, sed ex propriæ artis fiducia polliceri non dubitavit nihil per columnas obitutum quominus meridianæ lineæ ex alia in aliam templi navim traduci posset. Ceterum nullum opportuniorem fore locum, quam si inter columnas illas duas transmitteretur, quibus columnis fornix ad lævam ab ingressu secundus incumbit, Solis vero radius ex quarta testudine ortivæ navis non longe a pariete exceptus in lineam incideret; ira enim futurum ut neque hæc eas templi partes occuparet, quæ potissimum sacris ceremoniis addictæ sunt, & tamen longitudinem habere posset gnomonis duplam sesquialteram, quantam requiri noverat quo per ipsum hybernium solstitium Solem acciperet.

Cum ejus rei rationem omnem scripto declarasset, ac vir summus Cornelius Marchio Malvasia de eo ad Senatum retulisset, patribus rem perfici, ac Cassino negotium dari placuit. Ille perducta inter columnarum angustias ea quam meridianam futuram noverat lineæ, ac pluribus in eam demissis perpendicularis summo studio punctum ipsum in testudine investigavit in quo foramen statui oporteret, ut neque pro puncti altitudine spatium ad justam lineæ lon-

gitudinem deficeret, neque tamen nimio superaret. Postquam punctum illud reperit in eo loco laminam cum rotundo foramine ad horizonem libratam collocat, testumque quantum oportet superius patefacit. Punctum aliud in pavimento sub centro foraminis perpendicularo designat. Ubi omnia recte habere comperit mathematicos, literatosque alios viros ad diem ipsum æstivi solstitii, 21 Junii 1655 publico programmare invitat. Programma in hæc verba conceptum erat: *In hoc æstivo Solstitio celesti scientiæ a fundamentis instauranda in templo D. Petronii primus lapis ponitur: præsens Solstitium observatur: via Solis circa meridiem describitur: ibi in pavimento meridiana linea, quam Sol ab altissima orientalis forniciæ parte intromissus toto anni decursu in ipso meridiei puncto illustrabit, quotidianis Solis, Luneque & insigniorum siderum observationibus, physicisque experimentis accomodata, inoffenso tramite describitur, & publicæ censuræ exponitur die XXI & XXII Junii, civilis horologii hora xv.*

Cum omnium ordinum concursus factus esset, meridiæ appetente, ut primum Solis species in pavementum delapsa est, in ipso pavimento (quod antea hoc loci ad libellam componendum curaverat) vestigium curvæ semitæ ab utroque speciei margine peragratæ delineat, atque ad aliquod temporis post meridiem prosequitur. Dein circulari arcu descripto, cujus circuli centrum in perpendiculari puncto situm erat, earum semitarum quas delineaverat alteram in punctis duobus interfecat, sectionum intervallum bifariam dividit. Perspicuum erat ab astronomicis rationibus fore uti lineæ quæ ex arcus centro ad medium illud punctum recta duceretur, cælesti meridiano congrueret. In eo itaque posita filum quam rectissime potest intendit. Tum vero mira hominis solertia omnium oculis se se prodidit; filum enim recta inde productum inter columnas illas duas ita dirigi apparuit ut earum bases tantum non pertraderet. Denique aliis exaratis circulis, aliisque cum utraque illa marginum semita, notatis sectionibus experiri placuit an idem meridiani positus inveniretur, neque usquam discrimen repertum est quod ad decimam pollicis partem exurgeret, plerisque viri acumen, quibusdam & sortem extollentibus. Sed fortunæ sane fuerit eam esse columnarum collocationem uti meridianum solem, nusquam interciperent; illa vero quantæ artis atque industriæ fuisse existimamus hunc ipsum adamum positum præsensisse, Solemque in angustissimum illum tramitem ex destinato induxisse, atque omnia ita ordinasse ut non tam ad meridianam lineam inveniendam quam ad fidem inventæ adstruendam Solis ope indiguisse videretur?

CAPUT II.

Instrumenti descriptio.

Nunc vero quæ ad perficiendum deinceps aptandumque cælestibus observationibus instrumentum adjecta fuerunt non eo ordine persequar quo effecta sunt, sed illud potius quemadmodum his diebus visitur absolutum describam.

Meridiana hæc linea ex ferrea constat regula transversum digitum lata, inter regulas duas marmoreas unciarum duarum latitudine pavimento infixæ, atque ab eo puncto navis ortivæ, cui puncto foramen solem admittens in testudine imminet, per templi intercolumnium fere ad frontis parietem prope medianæ januæ latus porrecta. Regulæ illæ intercolumnium adeo ex obliquo pervadunt ut ferrea quidem columnarum neutram attingat, marmoreæ vero singulæ singulas ditringant, ac propterea aliquid de harum angulis abradi oportuerit. Gnomonis vicem in hocce instrumento gerit perpendiculum, quod a centro foraminis demissum in ipsum ferreæ regulæ caput, atque in medium ejus latitudinis punctum incidit. Foramen circulare est in lamella plana ex orichalco. Lamella quadrato lapidi cochleis adstringitur, qui lapis cum ipsa testudine calce coagmentatus est. Ne autem foraminis margines ob lamellæ crassitudinem aliquem Solis radium, cum præsertim obliquius incidit, interciperent, ita excavata est lamella ut foramen concavam frusti conici aut potius sphaerici superficiem referat, superiori parte quantum opus erat patulum, inferiori in aciem desinens. Eapropter planum foraminis, ejusque centrum, quod in definienda gnomonis altitudine attenditur in inferiori lamellæ facie est positum. Eam altitudinem pedum Bononiensium 71 unciarum 5 Cassinus est dimensus; sed quo facilius ex observationibus calculi ineantur, in partes æquas centum dividi, singulas vero centesimas in particulas mille subsectas cogitari placuit. Centesimarum distributio in lignea regula perpendiculi altitudinem æquante peracta est; eoque opere centesimæ singulæ uncias ipsas decem pedis Parisiensis comprehendere inventæ sunt; unde constat altitudo tota unciarum Parisiensium mille. Partis centesimæ modulus extat in lamina parastadi inserta ad caput lineæ meridianæ, in millenas ipse partes dispartitus, quo mensuræ ad centesimas millesimas altitudinis particulas defini-ri queant. Earum particularum foraminis diameter centum comprehendit.

Jam marmorea regula quæ ex parte orientis ferreæ adjacet e segmentis pluribus in longitudinem continuatis compingitur; hæcque segmenta singula ad duas ipsas altitudinis centesimas dimensa sunt. Numeri segmentorum terminis perpetuo ordine adscribuntur, qui terminorum singulorum a perpendiculi puncto distantiam per ejusmodi partes dinumeratam indicent. Numeratio ad 250 centesimas cum linea ipsa finitur; hunc enim præterpropter extremum, limitem radius ab imo Solis margine per brumale solstitium attingit; hinc longitudo lineæ sit pedum Bononiensium omnino 178, unciarum 6 semis. Cete-
rum

rum cum ob juncturarum asperitates nonnihil ambigui essent in marmoribus centesimalium termini, regula ipsa ferrea anno 1695, cum instrumentum a Cassino redintegratum est, incisuris e regione numerorum illorum appositis, distincta fuit, aliæque præterea incisuræ mediis locis adjectæ, quibus jam non binæ, sed singulæ partes centesimæ longe certius discriminantur, maxima enim cura est adhibita ut incisurarum distributio quam exactissima esset.

Regula porro alia marmorea quæ ab occidente est, ex pluribus & ipsa lapidibus, sed longitudine minime inter se se paribus jungitur. Singuli enim lapides singulis gradibus meridiani circuli respondent, qui gradus a vertice ad Solem, vel ad aliud Sidus numerantur cum ad ejus lapidis terminum radium emittit, quemadmodum adnotati lapidibus numeri ostendunt; itaque lineæ extremum paullo ultra gradum octavum & sexagesimum excurrit, quod ea in Bononiensi meridiano distantia sit Solis a vertice maxima. Verum hæc graduum notatio vix quicquam ad observationes ipsas conducit, sed ad uberiores quendam organi instructum videtur adjecta; gradus enim, & graduum partes longe accuratius ex prioris regulæ dimensionibus computari possunt.

Et si vero regula utraque e tot lapidum segmentis coalescit omnium tamen superficies coæquata est, atque ad eundem cum perpendiculari puncto horizontalem positum studiosissime exacta. Id vero ope aquæ in canali juxta lineam collocato consistentis effectum est, cujus aquæ superficies ab initio lineæ ad ejus extremum pertinebat. Lapidibus enim eoque attollebantur, aut deprimebantur, quousque singuli parem cum puncto perpendiculari a superficie aquæ altitudinem servarent. Sed qui rationem omnem atque artificium quo hæc singula peracta sunt scire cupit, legat licet quæ Cassinus in hujusce instrumenti historia vernaculo idiomate conscripta ac Bononiæ anno 1695 edita tradidit, quæque Dominicus Gulielminus eidem libro adjevit.

Ceterum ne quid operi deesset aptati sunt ad regularum latera quadrati lapides iis locis singulis, quæ solatis species attingit quum Sol singula Zodiaci signa ingreditur, inculptis ex adverso signis ducibus, altero ascendentis eclipticæ semicirculi, descendens altero, quorum signorum initia eisdem circulos æquatori parallelos describunt. Ad ipsum Cancri initium, in quo puncto fit Solis conversio, elliptica ejus species delineata visitur quo loco, quæque magnitudine in solstitio æstivo anni 1655 est observata. Idem in tropico Capricorni factum est, postquam hyemali anni 1656 solstirio imaginis magnitudo, & situs est animadversus, qui locus ad boreale extremum lineæ est positus, imagine ipsa nonnihil ultra 250 perpendiculari centesimas porrecta. Præterea lapidibus aliis juxta orientalem regulam incisæ sunt horæ ipsæ quæ ab occasu solis ad ejusdem ortum intercedunt, quibus diebus Solis semita per eas lineæ partes transit. Denique frustra alia marmorea ex parte occidentis sita, indicant dena quælibet scrupula tertia totius terræ ambitus, quæ scrupula ab initio lineæ ad singula hæc marmora intersunt; cum enim linea continenti aquæ superficiei æquidistans sit posita, minime recta est, sed curva, a meridiani tamen plano nusquam deflecta, ac propterea eas divisiones suscipit quibus circulum arcus dispersitiri solemus. Est autem ex Cassini rationibus tota lineæ longitudo ejuscemodi scrupulorum 130, sive secundorum 2, tertiorum

ro, paullo amplius, nempe totius meridiani circuli pars præterpropter sexcentimillesima; id quod in anta interiori medianæ januæ atramento descriptum, non tamen incisum voluit.

CAPUT III.

*De meridianis observationibus hac linea habendis,
atque a penumbra corrigendis.*

Proximum illud est ut ostendam quo pacto meridianæ observationes hocce instrumento peragantur, atque adeo peractæ sint eæ omnes, quas in hac serie tradimus. Id vero ex his quæ dicta sunt facile intelligitur. Meridie enim, quum Solis species a ferrea regula bissecta apparet, utriusque speciei marginis semita diligenter attenditur, ac lineolæ duæ in contiguïs marmoribus cultelli acie, aut rubrica exarantur, quas lineolas margines ipsi inter progrediendum perradant, id quod unicus observator haud difficulter præstat, commodius autem duo, qui singuli in singulos imaginis limbos intendant. Deinde circino, aut tæniola ex charta intervallum utrumque accipitur, quod inter notam, ac proximam illi ferreæ regulæ incisuram intercedit, numerusque centesimarum perpendiculari, qui incisuræ respondet exscribitur, qui numeri in orientali regula marmorea alternis incisuris e directo sunt apposti; atque illud etiam advertitur an nota ultra incisuram, cujus exscribitur numerus boream versus, an citra eam versus initium lineæ exarata sit, uti ex eo appareat num acceptum intervallum super centesimas in summam sit imputandum, an vero subducendum. Tunc intervallum ipsum quot partium millesimarum unius centesimæ sit ex modulo ad caput lineæ posito exploratur, atque ita Solaris utriusque marginis a perpendiculari puncto distantia ad centesimas millesimas particulas colligitur.

Neque dispares ratio si de Luna observanda agatur, quod interdum experiri placuit. Luna enim cum pleno orbe lucens meridianum pertransit satis nitidam sui speciem in hac linea efficit. Ad ejus autem speciei margines definiendos nihil aptius invenit, quam si charta alba in ipsa specie statuatur, ac sensim versus speciei marginem ita reducatur, ut chartæ limbus rectis semper angulis lineam interfecerit; ubi vero inter reducendam chartam nihil amplius luminis ab ea delibari appareat, ibi charta sistatur, tum vero lumen e laterna proferatur ac punctum ipsum notetur in quo chartæ limbus lineam fecit.

Ejusmodi autem mensurarum quas hæc linea suppeditat quanta sit subtilitas ex eo intelligi potest, quod particulis illis singulis vix uspiam duo secundæ scrupula meridiani circuli respondeant, quinimo ubi obliquior est Solis positus ne tres quidem aut quatuor particulæ in observatione neglectæ unius secundi scrupuli discrimen inferant, quemadmodum ex his quæ paullo post dicemus percipi poterit. Ne quid tamen silentio præteream duo sunt quæ tantæ huic observationum certitudini nonnihil detrahant. Alterum quod imago terminis

nis non usque adeo certis circumscripta sit, sed oras ancipites, quippe ex luce in umbram gradatim evanescentes habeat, præsertim ubi vapores, aut nubes æquabili quadam luce perfusæ Solem obsepant. Altera est causa perpetua quædam, utut exigua, imaginis agitatio, ac quasi subsultus; hic autem eo major deprehenditur quo Sol nitidior, ac magis purus est aer, ac quantum animadvertisse mihi videor non alius æstate atque hyeme, si ejus tremoris quantitatem ex angulorum quos subtendit mensura æstimemus. Verum hisco difficultatibus quadatenus occurratur si eadem in utroque speciei limbo notando ratio servetur, nempe si utrinque aut vividissimus, aut maxime languidus lucis terminus accipiat, ac utrinque etiam vel extremus, vel intimus eligatur limes, quem trepidatione illa species attingit; ita enim fiet ut si vel minus accurata limborum determinatio fuerit, in ipso tamen Solaris centri posito inde eliciendo vel nihil, vel longe minus errari possit; id quod ex dicendis fiet perspicuum.

Jam vero iis mensuris quæ in linea actæ sunt primum omnium correctio quædam est adhibenda, cujus correctionis necessitas a foraminis amplitudine oritur. Imaginis enim AIBR (*Figura 1.*) cujus extremitates A, & B in meridiana linea PK notantur, ultima illa ora AIBR minime a radiis per centrum foraminis C transeuntibus efformatur, sed ab aliis, qui foraminis DE circumferentiam distingunt; atque ideo extremum B a radio BDM, qui radius ex australi Solis limbo M profectus foramen in boreali ejus termino D ingreditur, extremum vero A a radio AEF, qui ex boreo margine F ad australem foraminis partem E emittitur. Quod si eam tantum imaginem quæ a radiis per centrum C transeuntibus effingeretur attendamus (quemadmodum in hac indagine attendi oportet) ducendæ erunt per C rectæ duæ CG, CH, duabus BD, AE æquidistantes, ac meridianæ lineæ occurrentes in G, & H; puncta enim hæc duo G, H imaginis ejus meridianos terminos designabunt, quod rectæ illæ CG, CH propter immanem Solis distantiam veluti radii duo spectari possint ex iisdem solaris disci punctis F, M promanantes, e quibus BD, AE promanant; ac propterea imago illa figuram ellipseos HNGT, verticibus G, H definitæ referre videretur, nisi radii alii e toto foraminis spatio illapsi coronam illam AIBR ipsi circumponerent. Ut ergo centralium tantum radiorum ratio habeatur, linea PA, quæ a perpendiculari puncto P ad propiorum speciei terminum A pertinet, ac superiori, sive boreo solis limbo F respondet, augenda est quantitate HA, puta semidiametro foraminis CE, quæ semidiameter partium est centesimarum millesimarum perpendiculari quinquaginta; PB vero, quæ scilicet remotiorem imaginis partem B determinat, & ad inferiorem, sive meridionalem limbum solis spectat, quantitate eadem CE, sive CD, aut BG minuenda. Hoc pacto linearum PH, PG mensuræ constantur, quas *tangentes correctas a penumbra*, quemadmodum PA, PB *incorrectas*, appellare consuevimus. Sunt enim ipsæ PH, PG tangentes trigonometricæ angulorum PCH, PCG, sive (producto ad verticem Z perpendiculari PC) angulorum ZCF, ZCM, nempe distantiarum apparentium a vertice utriusque Solis limbi F, M, si perpendicularum PC pro radio statuatur, ac radius partium centummillium esse cogitur.

Sed

Sed ne in hoc ipso ullus suboriatur scrupulus, propterea quod meridianam hanc lineam minime rectam esse, sed in circulem arcum inflexam supra posuimus, esto arcus ille, quem tota ejus longitudo occupat, AB (*Figura 2*) scrupulorum nempe secundorum 2, tertiorum 10, centrum vero ejus arcus, atque adeo telluris, punctum C, per quod actæ sint semidiametri CA, CB, atque eum arcum tangat in A recta AD, rectæ CB occurrens in D, jungaturque AB. Primum illud certum est arcum AB a tangente AD nihil deficere quod sensu percipi possit, quando ne ipsa quidem subtenfa AB, quæ arcu AB minor est, ab AD quicquam ad sensum deficit, cujus rei periculum facere licet in triangulo BAD, si AB ponatur partium 250000 (quæ totius meridianæ lineæ, sive arcus AB est longitudo ex perpendiculari modulo) atque ex notis angulis BDA (qui scilicet complementum est anguli C, secundorum 2. 10) & BAD (quem ejusdem anguli C dimidium esse constat) rectæ AD longitudo, quam subtilissime licet investigetur, nullum enim invenietur discrimen quod longe infra unam ex illis 250000 particulis non consistat. Jam ergo in eodem triangulo si iisdem datis quærat BD prodibit particulæ unius cum triente. Esto gnomonis altitudo AG, ipsi CA continua, & juncta GB secet AD in puncto K. Quoniam autem posita AB partium 250000 angulus G, distantia scilicet a vertice Solis solstitio hyemali, graduum est præterpropter 68, erit angulus GKA, vel BKD grad. 22; & cum angulus D a recto vix differat, fiet in triangulo BDK tertius angulus B iterum graduum fere 68. Ut ergo sinus anguli K, grad. 22 ad sinum anguli B, gr. 68, nempe ut 3 ad 9 fere, ita BD, quam supra invenimus particulæ unius cum triente, ad DK; quæ propterea erit particularum earundem plus minus 4. Tantulum ergo est discrimen inter AK, tangentem scilicet anguli AGK, & rectam AD, sive arcum AB, quem arcum pro ejus anguli tangente usurpamus; atque idem. methodo magis directâ, sed operosiore calculo invenietur si in triangulo BAG, in quo angulus A, & latera circa eum nota sunt, angulus G eruatur tum vero ejus anguli tangens AK cum subtenfa AB, sive cum arcu ipso AB conferatur. Porro particularum 4 differentia in ea radii GB obliquitate vix secundi scrupuli dissidium efficit in angulo AGK; ac multo etiam minores differentias prodire necesse est, si observatio in puncto alio quovis, inter A & extremum lineæ B interjecto peracta sit. Tuto igitur Meridianæ lineæ etsi nonnihil curvæ, mensuras observatione inventas, atque ut prædictum, est correctas, pro ipsis distantiarum a vertice tangentibus ad calculos assumimus.

CAPUT IV.

*De loco Solis cum apparenti, tum vero
in meridiano inveniendi.*

His peractis facile apparet quid agendum superſit ut ſolaris centri in meridiano circulo poſitus definiatur. Ex tangentibus enim correctis anguli ipſi diſtantiarum utriuſque limbi Solis a vertice per canonem trigonometricum, poſito radio partium 100000, nullo negotio eruuntur. Deinde ſi apparens tantum centri locus quaeratur, eorum angulorum is qui minor eſt e majori ſubducitur, differentiae dimidium minori adjungitur, vel de majori auferitur, ac centri diſtantia a vertice conſtat, arcus ſcilicet meridiani qui a vertice ad locum in quo centrum Solis apparet, intercedit, atque apparentis ab horizonte altitudinis eſt complementum.

Sed cum propter radiorum refractiones quas in athmoſphaera fieri aſtronomi deprehenderunt, ſidera omnia vertici propiora videantur quam ſunt, Solem autem ſideri praeſertim parallaxi haud prorsus contemnendae obnoxium eſſe iidem arbitrentur, cujus ea eſt natura ut contra ſidus a vertice remotius quam eſt oſtendat, neceſſe eſt ut qui locum ejus verum, in quo ſcilicet nulla refractione aut parallaxi interveniente e telluris centro ſpectaretur, aſſequi optat hujusce cauſae utriuſque rationem habeat. Eſt autem refractionis menſura & pro diſtantiae a vertice diverſitate diverſa, & eadem ſervata diſtantia aliis aſtronomiae ſcriptoribus alia, nec ſecus de parallaxi exiſtimandum. Pro eo ſiguitur ac quiſque hujus, aut illius aſtronomi auctoritatem ſequitur, opus eſt uti ex ejus numeris refractionis quantitatem exquirat quae utrique illi apparenti limborum ſolis a vertice diſtantiae competit, atque eam ſingulis diſtantiis adjiciat; tum vero & parallaxeos quantitatem ex his, quas praeligendas putat aſtronicis tabulis petat, eamque diſtantiis iſdem ſubducatur vel quod expeditius, ſingularum diſtantiarum parallaxes e ſingularum refractionibus auferat, ac reſiduum diſtantiis ſemper addat, refraction enim, cum de Sole agitur, ſaltem ex recentiorum hypothefibus, praevalet, Solemque magis attollit, quam parallaxis deprimat. In hunc finem tabellam refractionum, parallaxibus antea expunctis, ex Caſſini ſententia ſubjeci, iis tantum diſtantiis a vertice aptatam quas in meridiano Bononiae Sol per anni ſpatium aſſequitur. Hac vero tabella ipſa & ego in univerſa obſervationum ſerie ad calculos exigenda uſus ſum, & qui volet uti poterit. Sed de harum menſurarum electione plura in loco dicam.

Tabell.

CAPUT IV.

11

Tabella refractionum solarium, deductis parallaxibus, ex Jo: Dominici Cassini hypothefibus.

Diff. app. a vert.		Refract. deducta parall.		Diff. app. a vert.		Refract. deducta parall.		Diff. app. a vert.		Refract. deducta parall.	
G	I	I	II	G	I	I	II	G	I	I	II
20.	30	0.	39	37		0.	39	53.	30	1.	11
21			19	37.	30		40	54		1.	12
21.	30		20	38			41	54.	30	1.	13
22			20	38.	30		42	55		1.	15
22.	30		20	39			43	55.	30	1.	17
23			21	39.	30		43	56		1.	19
23.	30		21	40			44	56.	30	1.	20
24			22	40.	30		45	57		1.	22
24.	30		22	41			46	57.	30	1.	24
25			23	41.	30		47	58		1.	26
25.	30		23	42			48	58.	30	1.	28
26			24	42.	30		48	59		1.	30
26.	30		24	43			49	59.	30	1.	32
27			25	43.	30		50	60		1.	34
27.	30		25	44			51	60.	30	1.	36
28			26	44.	30		51	61		1.	38
28.	30		27	45			52	61.	30	1.	40
29			27	45.	30		53	62		1.	43
29.	30		28	46			54	62.	30	1.	45
30			29	46.	30		55	63		1.	47
30.	30		30	47			56	63.	30	1.	49
31			30	47.	30		57	64		1.	51
31.	30		31	48			58	64.	30	1.	54
32			32	48.	30	0.	59	65		1.	57
32.	30		32	49		1.	0	65.	30	2.	0
33			33	49.	30	1.	1	66		2.	3
33.	30		34	50		1.	3	66.	30	2.	6
34			34	50.	30	1.	4	67		2.	9
34.	30		35	51		1.	5	67.	30	2.	12
35			35	51.	30	1.	6	68		2.	16
35.	30		36	52		1.	8	68.	30	2.	20
36			37	52.	30	1.	9				
36.	30	0.	38	53		1.	10				

Ubi igitur apparentibus distantis solarium limborum a vertice hæc adhibi-

B 2

ta

ta fuerit a refractione ac parallaxi emendatio, tum vero ex distantia alterius cum altera collatione earum differentia elicitur, nempe solis diameter (quantum hæc per hujusmodi observationes definiri potest) ac diametri dimidium minori distantia adjectum, vel ex majori subductum, veram centri distantiam a vertice efficit, quæ veræ altitudinis est complementum; atque hoc patet verum in meridiani circulo Solis positum obtinemus.

Sed hæc omnia, quæ hoc & præcedenti capite diximus exemplo illustremus, uti rei universæ ratio vel iis pateat qui ab hisce studiis mediocriter exculti sunt. Exemplum autem ex ipsis hujusce seriei observationibus petemus, ut hæc quæ tradimus præcepta in iis observationibus ad calculos revocandis servata fuisse appareat.

Exemplum. Anno 1696 die 10 Novembris Dominicus Gulielminus tangentes in hac linea notavit utriusque marginis Solis, inferioris quidem partium 190174, superioris vero partium 185882. Calculi ergo ita ponendi erunt.

	Limbi inferioris	Limbi superioris
Tangentes incorrectæ	190174	185882
Semidiameter foraminis	sub. 50	ad. 50
Tangentes correctæ	190124	185932
Distantiæ a vertice apparentes quæ tangentiis correctis respondent in Canone trigonometrico	gr. 62. 15. 24	gr. 61. 43. 38
Refraçtio deducta parallaxi, e superiore tabella	ad. 1. 43	ad. 1. 40
Distantiæ veræ limborum a vertice	gr. 62. 17. 7	gr. 61. 45. 18
Distantia minor e majori subducenda	gr. 61. 45. 18	Semid.ap.ad. 15. 54
Differentia quæ est Solis diameter apparens	31. 49	Distantia vera
Ejus dimidium sive apparens semidiameter	15. 54	centri Solis a vertice gr. 62. 1. 12

Sciendum autem solares diametros, quæ hujusmodi observationibus, quantumvis accurate habitis, inveniuntur, perpetuo minores reperiri quam si iisdem diebus per telescopium, sive excepta in charta Solis imagine, sive aptato micrometro, seu denique notato ope horologii automati tempore excursus Solis per horarios circulos, investigentur; cujus rei minime obscura est ratio. Radius enim ille ultimus SA, (Figura 3.) vel MD, a quo imaginis oram extimam definiri diximus, cum omnium a Sole unicus in punctum A, vel D incidat haud satis efficax esse potest quo visibilem sui speciem in pavimento, præsertim fenestrarum lumine, radiisque aliis undique ex diverso repercussis illustrato, effingat; quinimo existimandum ne plures quidem allos prope eum interiores radios observatori sat manifestos esse posse, donec ad certam ab extima ora distantiam ventum sit, quæ tot denique e diversis Solis partibus acci-

accipiat ut eorum impressio sat valide visum percellat. Pro eo enim ac alia, atque alia puncta interiora sumimus, certum est ex opticis rationibus plures ex his punctis Solis partes detegi; atque hinc sane illa quam diximus marginum anbiguitas ac luminis prope eos per gradus extenuatio. Eo igitur fit ut observator numquam puncta ipsa A, & D in meridiana linea notet, sed interiora alia, veluti B, & E, pari intervallo ab iis distita, si modo diligenter curat ut pari utrimque luminis gradu speciem determinet. Itaque quum mensuris ab eo actis correctionem deinde illam partium 50, quasi puncta A, & D notata forent, adhibemus, nimis speciem contrahimus, & intra centralem imaginem FG, veluti in I, & H excutimus; propterea pro vera Solis diametro, quæ ad centrum foraminis C subtenditur, nempe GCF, prodit nobis angulus iusto minor ICH. Ejusmodi tamen in taxanda diametri quantitate fallacia in ipso centri posito nihil turbat; nisi forte vel diversam ad A, & D luminis oblique incidentis attenuationem, vel angulorum quos æquales rectæ HF, GI ad C subtendunt disparitatem morari velimus, quæ sane geometricæ subtilitatis sunt, astronomicam vero indaginem præ eorum exiguitate prorsus effugiunt.

Id potius ex usu foret si illius diminutionis certa quæpiam regula constitui posset, cujus regulæ ope ab observata diametro ICH veram GCF arguere liceret. Cassinus diametros quæ ab hisce observationibus inveniuntur sexagesima præterpropter sui parte augendas arbitratus est. Mihi quamplurimas hujusce seriei observationes expendenti quæ per hyemis initium habitæ essent, quum Sol haud longe a perigæo distat, ac mediam quamdam inter omnes mensuram attendenti non valde a vero abudere visa est hæc ratio. Ast ubi eas aggredere observationes, quæ ætate ineunte cum Sol prope apogæum versaretur, sunt habitæ, haud paullo majus quam partis sexagesimæ discrimen comperiebam. Est enim Solis perigæi diameter GCF scrupulorum 32.46, atque angulus ICH, qui Decembri exeunte observatione elicitur scrupulorum est 32.11, discrimine secundorum 35, quæ anguli ipsius ICH pars est quinta & quinquagesima. In apogæo autem, hoc est sub exitum Junii diameter GCF scrupulorum est 31.40, at ICH observari solet scr. 30.51 quæ ab illa deficit secundis 49, puta hujusce anguli parte octava & tricesima. Sed neque rationes constare comperi si pro angulis lineas ipsas GF, IH inter se se conferrem. Si quidem prope perigæum centralis imaginis longitudinem GF partium esse 6650 calculi ostendunt, propterea quod Sol eo tempore gradus circiter 67.45 a vertice recedat; atque IH reperitur tunc ex observatione 6530; differentia est partium 120, quæ lineæ IH pars est quarta & quinquagesima; prope apogæum vero, ubi Sol 21 gradibus a vertice abest, GF colligitur ex computo partium 1062, sed IH observatur partium 1036, discrimine partium 26, nempe quadragesimæ partis rectæ IH. Ac perdifficile arbitror hæc diametrorum diminutiones ex opticis tantum principis certo assequi, præsertim cum physicæ causæ plures, eæque mutabiles interveniant, quæ nullis adstringi se legibus patiuntur. Itaque accuratæ diametrorum mensuræ telescopiis potius quam hoc instrumentorum genere investigandæ sunt.

CAPUT V.

*De poli altitudine, & Eclipticæ obliquitate præcognoscendis;
ac Solis longitudine exinde supputanda.*

Postquam locus Solis in meridiano inventus est; ut ejus in eclipticæ quoque positus eruatur, qui astronomis longitudo dicitur, duo præcognosci necesse est: primum altitudinem poli in hac ipsa Divi Petronii æde, ubi observationes peraguntur, quæ geographica loci latitudo appellatur, deinde eclipticæ ad æquinoctialem circulum inclinationem, quæ obliquitas eclipticæ dicitur. Ne vero hæc duo ex aliorum scriptis petenda sint, utrumque eadem opera ex hac ipsa observationum serie cognosci potest, si cæ quæ per solstitii utriusque tempus habitæ sunt consulantur. Quos autem in dies, ac etiam præterpropter horas solstitia singulis annis incidant satis certo ex ephemeride quampiam compertum esse potest. Etsi vero non est necesse ut solstitii utriusque observatio eodem anno habita sit, ac ne illud quidem ut alterutra saltem eo sit peracta quo illa in qua Solis positum quærimus (quod nimirum in tropicis punctis eadem fere singulis annis tangentium dimensiones recurrant) securius tamen propiora quam remotiora solstitia adhanc indaginem eliguntur.

Igitur ad utriusque solstitii diem distantiam veram centri Solis a vertice ex meridianis observationibus collige, tum æstivam ab hyemali subducito, differentiæ enim, nempe tropicorum distantia, dimidium erit eclipticæ obliquitas, quam ubi æstivæ distantia adjeceris, vel hyemali ademeris, loci latitudinem conslaveris. Atque hæc quidem ratio accuratissima est quum solstitium vel meridiæ, vel paucis sive ante, sive post meridiem horis committitur; aut ubi paullo magis a meridiæ absit, distantia a vertice eo die observata correctiuncula indiget ut ad ipsum Cancræ, aut Capricorni tropicum redigatur. Eam correctiunculam habes in subiecta tabella, cujus numeri longitudini Solis attributi sunt, quam longitudinem habet meridiæ ejus diei, vel etiam pridie aut postridie quam solstitium committitur. Hanc vero correctionem, cum de æstivo solstitio agitur, meridianæ distantia a vertice subducendam memento, cum de hyberno addendam. Id ubi præstiteris, tum vero utere distantia correctis, quæ ipsæ erunt distantia tropicæ, seu solstitiales, ac reliqua uti dictum est perage.

*Tabella correctionis distantiae meridiana
centri Solis a vertice prope solstitia ut
fiat distantia tropica a vertice.*

Longitudo Solis.		Correctio dist. a vert.	
Sign.	G l	sec.	
II ♋	28. 25	34	1. 35
	28. 30	31	1. 30
	28. 35	27	1. 25
	28. 40	24	1. 20
	28. 45	21	1. 15
	28. 50	19	1. 10
	28. 55	16	1. 5
	29. 0	14	1. 0
	29. 5	11	0. 55
	29. 10	9	0. 50
	29. 15	8	0. 45
	29. 20	6	0. 40
	29. 25	5	0. 35
	29. 30	3	0. 30
	29. 35	2	0. 25
	29. 40	1	0. 20
	29. 45	1	0. 15
	29. 50	0	0. 10
	29. 55	0	0. 5
	30. 0	0	0. 0 5 70
			Longit. Solis.

Exemplum esto in utroque solstitio anni 1697. Die ergo 20 Junii ejus anni, quo die ephemerides solstitium contigisse ostendunt, meridianam distantiam veram centri Solis a vertice in hac ipsa observationum quas tradimus serie ex tangentibus notatis supputatam invenies grad. 21. 1. 13. quoniam autem ex ephemeride longitudo Solis meridie fuit grad. 29. 37. Geminorum, correctionem distantiae illi adhibendam superior tabella exhibet secundorum 2, subducendam nempe e distantia a vertice grad. 21. 1. 13. (quandoquidem de æstivo solstitio agitur) ut fiat tropici æstivi distantia a vertice grad. 21. 1. 11. Die porro 20 Decembris, quo ex ephemeridum numeris Sol Capricorni initium attingit, extat in eadem serie distantia a vertice observata gr. 67. 58. 9. Erat longitudo Solis meridie gr. 29. 28 Sagittarii; unde ex tabella correctio est secundorum 3, & ea quidem distantiae a vertice addenda, quod de brumæ solstitio

tio agatur. Fiet igitur distantia ipsius tropici Capricorni a vertice gr. 67. 58

12. En ergo rationum progressum:

Distantia tropica centri Solis a vertice hyemalis gr. 67. 58. 12

Distantia tropica æstiva gr. 21. 1. 11

Differentia gr. 46. 57. 1

Differentiæ dimidium, nempe obliquitas eclipticæ gr. 23. 28. 30

Hæc distantia tropicæ æstivæ adjecta, vel hybernæ subducata conficit gr. 44. 29. 41

quæ est latitudo, sive altitudo poli Bononiæ in æde D. Petronii.

Potes etiam poli altitudinem per inerrantium stellarum observationes exquirere, ejus præsertim quæ ab hoc ipso polaris stellæ nomen accepit, cui observandæ hæc ipsa meridiana linea præsto est, instrumento quodam illi aptato, quod in hocce usus servatur. Verum de universa hac tum obliquitatis eclipticæ, tum latitudinis indagine pluribus infra agam, ubi & numeros hocce exemplo repertos, nimirum obliquitatis grad. 23. 28. 30, & latitudinis grad. 44. 29. 41 minime perpetuos esse apparebit.

Postquam autem duo hæc quæ præcognoscenda erant comperta habueris, confer latitudinem loci cum distantia centri Solis a vertice ejus diei, quo die locum Solis in ecliptica ex observatione requiris, horumque arcuum duorum minorem e majori aufer, residuum enim erit distantia centri Solis ab æquinoctiali circulo, quam astronomi declinationem appellant; hæcque septentrionalis est ubi distantia centri a vertice loci latitudine minor fuerit, meridionalis ubi major. Deinde logarithmum sinus declinationis cum logarithmo radii in summam confer, atque ex ea subtrahe logarithmum sinus obliquitatis eclipticæ; fietque logarithmus sinus ejus arcus, qui a proximo æquinoctio ad centrum Solis intercedit. Si ergo declinatio septentrionalis fuerit, & Sol ab æquinoctio versus solstitium tendat, hic arcus erit ipsa longitudo Solis ab initio Arietis, sin autem a solstitio ad æquinoctium progrediatur, inventum arcum aufert ex gradibus 180, ut longitudinem efficias. Quod si declinatio sit meridionalis, adde ab æquinoctio ad solstitium arcui illi gradus 180, a solstitio vero ad æquinoctium ipsum arcum deme e gradibus 360, & utroque casu quæsitæ longitudo constabitur.

Veluti in eo exemplo, quod superiori capite posuimus, diei scilicet 10 Novembris 1696.

Erat distantia meridiana centri Solis a vertice vera gr. 62. 1. 12

Latitudo loci nuper inventa, subducenda gr. 44. 29. 41

Fit declinatio centri meridionalis gr. 17. 31. 31

Logarithmus hujusce declinationis cum logarithmo radii 1947874

Logarithmus obliquitatis eclipticæ nuper inventæ gr. 23. 28

30 subducendus 960026

Fit logarithmus distantia Solis a proximo æquinoctiali puncto 987848

Est

CAPUT V.

Est ergo hæc distantia	17
Addantur gradus 180, quod declinatio sit australis, &	gr. 49.6.27
Sol per eos dies ab æquinoctio ad solstitium pergat	gr. 180
Fit longitudo Solis	gr. 229.6.27
Sive	Scorpionis gr. 19.6.27

CAPUT VI.

*De harum observationum serie, quemadmodum ordinata
& unde deprompta fuerit.*

HActenus instrumenti constructionem ejusque usum in Sole observando præcipuum sum prosecutus. Verum ne illi qui hac observationum serie uti voluerint necesse habeant eas omnes quas diximus supputationes inire, singulis seriei observationibus computum adjunxi, quem tamen nonnisi ad distantiam veram centri Solis a vertice perduxî. Licet enim & declinationes quoque, & longitudes ad plures annos supputassem, aut supputandas curassem, tamen cum declinatio a loci latitudine pendeat, cujus mensuram nonnihil ipsam sibi dissidentem invenimus, longitudo autem, præter declinationis incertitudinem, ab eclipticæ obliquitate, quæ minime constans videtur, iterum haud parum ambiguitatis contrahat, de utriusque electione liberum cuique judicium relinquere malui.

Prima igitur seriei columna habet tangentem utramque eo die qui adscriptus est observatam, sed correctam a penumbra pro foraminis semidiametro, uti dictum capite III, quarum tangentium duarum prior ad limbum inferiorem sive australem Solis, posterior ad superiorem sive boreum spectat: Columna secunda arcus exhibet distantie apparentis utriusque ejus limbi a vertice, qui arcus in canone trigonometrico tangentibus correctis respondent: Tertia arcus distantie a vertice veræ, nempe a refractione, ac parallaxi expurgatæ secundum Cassinianos numeros, quos capite quarto in tabella tradidimus: Quarta differentiam distantie veræ duorum limborum a vertice, sive Solis diametrum, quanta hoc instrumento apparuit: Quinta denique distantiam veram centri Solis a vertice, seu veræ altitudinis complementum. Ubi advertendum in hac serie rationem esse habitam vitiorum quæ interdum sive in gnomonis foramine, sive in lapidum libramento deprehensa fuerunt, quibus sane de causis distantie Solis a vertice, præsertim circa annum 1722, aliosque succedentes, nonnihil corrigendæ sunt. Sed de his consule quæ infra capite XII tradam.

Singulis autem observationibus quæ actæ fuerant antequam egomet agere, ac seriem hanc consignare inciperem, auctor est adscriptus unde eas deprompti, adjectis præterea si quæ ille de aeris statu, aut de observationis sive cer-

studine, five dubietate notasset. Neque tamen existimandum singulas ab iis habitas e quorum libris, aut chartis exscriptæ sunt, cum & illi sæpe ab aliis acceptas memorent, & interdum accepisse potuerint etiam si non memorent. Hi porro partim eas observationes in operibus a se editis vulgarunt, veluti Cassinus in specimine observationum anni 1656, Mengolus in anno; Riccio. lius in astronomia reformata, ac alii alibi, de quibus nihil attinet dicere, cum libri illi omnium manibus terantur; partim adversariis aut schedis mandatas reliquerunt, quorum ego scriptorum aliqua autographa insepxi, alia ab autographis me curante desumpta obrinui, ac ex omnibus seriem compegi; hæc vero scripta quæ fuerint, & a quibus acceperim hic recensendum duxi. Sunt autem hæc:

Schedæ atque epistolæ plures apud Joannem Dominicum Cassinum, quibus observationes multæ continebantur cum ab ipso, tum ab aliis, præsertim Augustino Fabio, ac Geminiano Montanario habitæ. Hasce omnes Cassino ipso consulto mihi est impertitus anno 1704 summus dum vixit Astronomus Jacobus Philippus Maraldus, ejus sororis filius, cujus præsertim consuetudini quæ multa mihi curante desumpta coram, partim per literas interceisit, acceptum fero si quid in astronomicarum observationum usu profeci.

Augustini Fabrii scripta autographa, quæ Albertus Comes Grassius Bononiæ Senator ab illius hæredibus sibi tradita mecum communicavit anno 1699. Libellus erat in quo dietim observationes notabat & calculos longitudinis Solis subducebat, ac præterea schedæ duæ, altera manu Fabrii, altera cujus nescio. Ex hisce omnibus quæcumque ad rem meam erant excerpti. Fuerat Fabrius Cassini, dum Bononiæ doceret, auditor, eumque in observationibus adjuverat.

Geminiani Montanarii libellus autographus inscriptus: 1673 *calculi observationum Solis hinc ad præteritos annos ex heliometro D. Petronii*. Libellum hunc anno 1705 pet Virum celeberrimum Franciscum Blanchinum a Maria Pisana Corraria Matrona Veneta exscribendum obtinui, quippe quæ scripta omnia, Montanario vita functo, in domo Corrariæ gentis ab ipso relicta servabat.

Observationes astronomicæ a Petro Mengolo partim per se partim per socios adiutoresve habitæ, a Julio Cæsare Calcina, qui in iis erat, e schedis inter observandum exaratis desumptæ, ac in ordinem digestæ, mihi quæ eodem dono traditæ circiter annum 1703.

Dominici Gulielmini adversaria, libellis quatuor comprehensa, necnon chartæ aliquot quotidianarum ejusdem supputationum loci Solis ex observationibus, in libellos alios compactæ. Horum omnium autographa ipsa inspicenda mihi tradidit, ac describendi copiam fecit anno 1713 Joseph Ferdinandus Gulielminus, Dominici filius, nunc Bononiensis gymnasi anatonicus.

Fasciculus observationum post lineæ meridianæ restaurationem a Cassino, Gulielmino, aliisque habitarum, una cum computis declinationum Solis, quos Ignatius Uccellus, qui ædilium magistratui a tabulis conscribendis erat, in dies singulos subducebat, interdum & ipse vel solus, vel cum illis observans. Has mihi chartas dono ipse dedit anno 1710.

Alber.

Alberti Comitis Grassii Bononiæ Senatoris pagellæ observationum ab ipso mihi impertitæ anno 1699. Eas observationes ut plurimum cum Gulielmino habuerat.

Hæc quidem de observationibus ante illud tempus habitis quo ipse eas quæ haberentur fervare institui; proximo enim anno quam Cassinus instrumentum restituit, anno videlicet 1696, cum ad hæc studia animum adiecissem, primum Gulielmini observationibus frequens adesse, dein illo Patavium evocato ipsemet peragere, atque in seriem referre capi. Quod cum ad plures annos præstitissem, neque vero perpetuo id agere possem, aliorum subinde opera usus sum, ac quantum in me erat curavi ne unquam certus homo decisset, qui id sibi negotii datum existimaret, mihi quæ observationes quas habuisset traderet. Hi vero qui fuerint nunc subjiciam.

Vittorius Franciscus Stancarius analysios professor publicus, hic cum adulescens astronomiæ studio se addixisset ex anno 1697 tangentes in hac meridianæ lineæ primum cum Gulielmino, deinde mecum notare cepit, ac quoties adesse non possem meas ipse vices supplere; Tanta enim mecum illi conjunctio erat ut neuter quicquam sibi æsum in hisce studiis putaret quin alteri commune esset. Ejus opuscula mathematica ac observationes nonnullas, mecum ac cum fratribus meis habitas edidi anno 1713. Objerat ipse in ætatis flore anno 1709.

Gabriel Manfredius frater, nunc & ipse publicus analysios professor, tum vero adulescens admodum, nobiscum observabat, quousque anno 1703 Romam est profectus. Deinde anno 1706 reversus maximam partem earum observationum peregit, quæ inde ad annum 1708 in hac serie recensentur.

Heraclius Manfredius frater Medicinæ Doctor, nunc matheseos lector honorarius, cum Stancario ac Gabriele fratre ad annum 1708 sæpe observavit, aut eorum absentium vices egit.

Antonius Leprotus nunc Clementis XII Pont. Max. archiater sæpe cum Stancario ac Manfrediis fratribus, deinde solus observationes habuit, præsertim anno 1708.

Julius Caesar Parisius Astronomiæ studiosus mihi quæ in publico observatorio adjutor designatus, circiter annum 1710 me curante observare cepit ac inde ad annum 1714 profectus est.

Paulus Balbus Medicinæ Doctor nunc Bononiensis gymnasii anatomicus cum Parisio primum deinde solus annis 1714 & 1715 rogatu meo observationes egit.

Joseph Antonius Nadius Philosophiæ Doctor Parisio succedens ut me in publico observatorio adjuvaret tangentes identidem notabat anno 1717 aliisque succedentibus ad 1721; quo ipso anno obiit dum observatorium ædificaretur.

Joannes Baptista Banderius J. U. Doctor a me rogatus anno 1722 huic rei vacare cepit atque ad annum 1724 perrexit. Obiit anno 1726 cum vix adulescentia excessisset.

Joannes Jacobus Parma Philosoph. Doctor ex anno 1724 ad 1730 observationes post Banderium est profectus. Proximo inde anno constanti adhuc ætate vita functus est.

Anno 1731 *Josephum Roverfium*, juvenem mathematicis studiis addictum, rogavi uti observationes per æquinoctia saltem ac solstitia sibi agendas recipere, quod deinceps præstitit.

Anno 1733 *Andreas Celfius* Regius in Vpsaliensi gymnasio astronomus, ac Scientiarum academix nuper ibi erectæ a secretis, Bononiæ cum moraretur ex die 13 Octobris quotidie cum per tempestatem liceret Solem ad Divi Petronii observare instituit ad usque diem 8 Aprilis 1734, quo die Bononia discessit. Eas observationes mihi perhumaniter est impertitus cum reliquis recensendas.

Illo autem profecto *Roverfius* iterum id sibi muneris suscepit, quo etiam, num diligenter fungitur, ejus interdum vices subeunte *Eustachio Zanotto* Philosophiæ Doctore, qui meum nunc in publico observatorio adjutor est.

Præter eos quos hæcenus enumeravi nonnulli quandoque alii Solem hoc instrumento observarunt, quorum nomina suis quæque diebus apposui. Arbitror autem a Cassiniana restauratione vel nullam, vel paucas peractas fuisse observationes quæ ad me non pervenerint, & in hanc seriem relatæ non fuerint, si aliquot excipias circiter annos 1716 ac 1717 habitas, quarum schedulæ perierunt. Ante annum vero 1695 fieri potest ut aliquæ sint quæ me undique investigantem effugerint, opinor tamen haud multæ.

CAPUT VII.

De hujusce instrumenti examine per Mengolum habito.

Nunc vero cum observationum certitudo non minus ab astronomi solertia quam ab exacta instrumenti constitutione pendeat, instrumenta autem omnia atque adeo gnomones ipsos, utcumque firmis ædificiis subnixos, ac initio assabre elaboratos, exiguis interdum morionibus depravari posse compertum sit, postulat instituti mei ratio ut quæ quibus temporibus vitii suspensiones in gnomone hoc nostro obortæ sint, tum vero quæ iis vitiis detegendis examina sint peracta, quæve ratione instrumentum redintegratum, ordine referam; ne qui observationes hæcæ præ manibus habituri sunt quid de singulorum fide statuendum sit ignorent, sed ad sua quæque tempora referentes iis cum delectu utantur.

Ac primum sciendum est lineam hanc meridianam non antea fuisse marmoream, & ad aquæ superficiem libratam quam circiter æstivum solstitium, anni 1656, id quod mihi a Cassino acceperat *Maraldus* significavit. Cum enim ante annos 30 ac eo amplius instrumenti hujusce historiam concinnare aggressus essem, jam inde ab eo tempore de omnibus quæcumque huc pertinerent, neque libris mandata reperirem, Cassinum ipsum adhuc superstitem vel egomet per literas consului, vel per *Maraldum*, qui cum frequentior mihi erat literarum consuetudo rogavi. Neque tamen idcirco minus certæ habendæ sunt observationes illæ, quæ a prima lineæ descriptione, solstitio videli-

cet

cet anni 1655 ad marmorum collocationem peracta fuerant, toto enim eo temporis spatio canalis aqua plenus lateritis aggeribus contentus secundum lineam ductum protensum iacuit, ac quoties Solaris imaginis limbi in lateribus notarentur, toties notae illae ad aquae superficiem, ac per eam ad perpendiculari punctum exigebantur. Una fuit observatio quae correctione indiguerit, quae nempe omnium prima inter opus ipsum describendae lineae acta fuerat, cum scilicet linea nondum ad perpendiculari modum exquisitae commensa esse posset; hanc vero observationem postmodum a se correctam Cassinus Ricciollo tradidit, a quo eam desumpimus, atque in seriem hanc retulimus.

Primus quod sciam de instrumenti vitio vulgatus est rumor anno 1669, aut 1670, cum Cassinus in Galliam esset profectus. Suspicioni ansam praebuerunt haud obscura luxatae ipsius sacrarum aedium compaginis indicia, cum transversariae catenae ferreae, quibus medianae navis fornices colligantur minime rigidae atque intentae, quemadmodum positae initio fuerant, sed manifesto incurvae viserentur, cuiusmodi in hunc diem visuntur. Ejus rei mentionem iniecit celebris huiusce gymnasii mathematicus Petrus Mengolus pagina 25 ejus operis, quod *de refractionibus ac parallaxibus Solis* Bononiae edidit anno 1670; quo ipso anno perpendicularum die 14 Julii ex centro foraminis demissum nonnihil ad occasum declinasse, ita tamen ut regulae ferreae crassitudinem non excederet, testatur Fabrius in libello M. S. observationum, huicque experimento adfuisse Montanarium, atque ipsum Mengolum supervenisse ait, nusquam tamen perpendiculari altitudinem mensuris tentatam memorat.

Ceterum longe prolixius rem hanc profectus est Mengolus libro alio quem *annum* inscripsit, ac triennio post evulgavit, ubi pag. 258 geometris depravationem jam non conjecturis tantum conceptam, sed mensuris una cum Francisco Doctore Monario Centensi actis sibi deprehensam, exploratamque testatur. Ligneam enim catenam (regulam nempe e regulis pluribus junctam) ita gracilem ut laxae per foramen transmitti posset, ex puncto verticali ad perpendicularum erexit, ac per foramen trajectae ipsam foraminis aciem impressit; quo perpendiculari longitudinem adamussim comprehenderet, mox in pavimento reclinatam meridianae lineae applicuit, illud praecavens ut catena utroque posita maxima qua posset vi traheretur; eoque experimento perpendiculari altitudinem a centesima lineae divisione particulis 45 deficere comperit, proptereaque particularum esse 99955 haud amplius; Itaque tangentibus omnibus distantiarum a vertice, quae hoc instrumento captarentur augmentum ea proportionem tribuendum esse statuit, quae est 99955 ad 45. Ad haec marmorum eorum quae orientalem lineam regulam compingunt, quaeque ad duas perpendiculari centesimas dimensa fuisse diximus, singillatim positiones exquisivit, ac nonnullorum ex iis initia meridionalia aliquot particulis a iusto positu aberrare agnovit; haec nimirum quae subjecimus:

*Centesima perpendiculari
in marmoribus notata*

*Postus initii meridiona-
lis lapidis contigui mensu-
ra deprehensus.*

94	94005
106	106005
161	161995
232	232010
234	234010
236	236010
238	238010
240	240010
242	242010
244	244010
246	246010
248	248010
250	250020

que tamen animadversio nihili est, non enim Cassinus initia meridionalia lapidum deinceps subsequendum, sed (si forte commissura hiarent) extrema borealia præcedentium, quibus ipsis extremis centesimæ adscriptæ sunt, attendi, & tanquam centesimarum terminos spectari voluerat, cum scilicet regula ferrea nondum incisuris distincta esset, quas postmodum, anno scilicet 1695 adjectas fuisse diximus.

Sed ad perpendicularum ut revertar, vitium illud particularum 45 minime ex recenti ob ædificii luxationem obrepisse statuit Mengolus (pag. 6) sed initio, cum instrumentum ipsum extrueretur, contractum est arbitratus. Multorum enim testimonio sibi compertum ait quallacumque illa commotarum testudinum argumenta non modo ante meridiane lineæ descriptionem animadversa, verum & antea ab architectis provisum ne id malum longius procederet; ad hæc omnem illam motus suspensionem de novo opere conceptam, gnomonem vero in antiquo collocatum, cui nulla esset causa quamobrem, loco cedere, ac subidere debuerit.

Denique (pag. 258.) instrumentum jam inde ab anno 1655 corruptum ex observatione quadam solis confirmat, quam observationem affert Ricciolus astronom. refor. libro primo capite 8 pag. 26. Die enim 8 Augusti ejus anni ipse cum Gimaldo meridianam altitudinem centri Solis ad Divæ Lucie captavit grad. 61. 41. 29, eam vero ad Divi Petronii fuisse ait 61. 41. 0.; quod ita accipiendum apparet ut hic captata fuerit gr. 61. 40. 50, sed ad Divæ Lucie parallelum ab ipso Ricciolio redacta augmento secundorum 10 (que parallelorum est differentia) ac propterea distantiam a vertice ad Divi Petronii fuisse gr. 28. 19. 10, indeque centri Solaris tangentem ibi observatam arguit Mengolus 53888. Huic porro particularum 6 correctionem addendam esse ex eo colligit quod aliis per id tempus notatis tangentibus particulas 5 aut 10 Cassinus ipse adjecerit (eam scilicet observationem indicat die 21 Junii 1655 habitam, quam unam postmodum a Cassino correctam diximus) inde ergo fieri tangentem veriore ex observatione in Divi Petronii 53894, atque ideo

con-

centri a vertice distantiam (apparentem scilicet) gr. 28. 19. 20, altitudinem vero 61. 40. 40, quæ ad Divæ Lucæ foret 61. 40. 50, cum tamen a Grimaldo & Ricciolio observata fuerit 61. 41. 29; quæ discrepantia defectum perpendiculari particularum ipsarum 45 mirifice illi comprobatur; ut enim tangens veræ altitudinis gr. 61. 41. 29 nempe 185653 ad tangentem gr. 61. 40. 50, puta 185569, ita partes 100000 ad eam longitudinem perpendiculari ex qua angulus ille 61. 40. 50 deductus est, quæ propterea longitudo partium erit 99955, deficiens a 100000 partibus ipsis 45. Hæc ergo de causa omnes, quotquot in eo libro memorat, observationes a prima instrumenti constructione habitas ea quam diximus ratione corrigit, neque aliter quem correctas usui esse posse contendit.

Mihi vero (ut a postrema hac Mengoli probatione incipiam, qua perpendiculari defectum illum partium 45 ad primam gnomonis constructionem referre conatur) mirari subit tantum geometram quantus omnium opinione ac maximo merito suo habitus est Mengolus; non animadvertisse ex observatione illa quam assert contrarium plane effici, atque ipse vult. Esto enim tangens centri Solis eo die in Divi Petronii gnomone notata AB (Figura 4.) foraminis centrum C, perpendicularum AC, radius e centro Solis per foraminis centrum directus CB. Quantacumque ergo fuerit eo tempore perpendiculari longitudo AC, certissimum est veram centri Solis a vertice distantiam (si modo refractiones ac parallaxes, quod ille fecit, seponamus) fuisse angulum ACB, ac veram ejus altitudinem ABC. Jam si perpendicularum a partibus 100000 (quod ipse contendit) deficiebat quantitate aliqua, veluti CD, perspicuum est observatorem, qui ejus rei inscius angulos distantie a vertice arque altitudinis ex tangente AB in canone trigonometrico supputavit; quæ radius ex altitudine 100000 promanasset, inventurum fuisse pro angulo ACB angulum ADB, pro angulo autem ABC angulum ABD, minorem scilicet distantiam a vertice, ac majorem altitudinem. Atqui in observatione per Mengolium allata oppositum plane accidit; altitudo enim in Divi Petronii ex tangente illa (utlibet correctæ) inventa dicitur graduum 61. 40. 40; quæ sane vel si decem secundis augeatur ob locorum discrimen, veram tamen altitudinem (a Ricciolio videlicet ad Divæ Lucæ definitam) adeo non excedit, ut secundis 39 ab ea deficiat. Tunc longè ergo a vero abest ea observatione evinci perpendicularum jam inde ab anno 1655 justo fuisse brevius particulis 45, ut potius, si ex illa judicium ferendum sit, tantumdem justo longius prodeat. Sed videlicet minime æquum est ex unius observationum fide instrumenti tam exquisito studio confecti fidem in dubium revocari, cum vel alteruter, vel uterque observator exiguum quiddam errare potuerit; ac sane neque illius observationis ad Divi Petronii actæ auctorem Ricciolius memorat, neque, quod solet, tangentium ipsarum numeros consignat, e quibus fallacia, si qua irrepserat, detegi fortasse posset, neque vero egomet dum hæc observationes colligerem eos numeros usquam nancisci potui, ut propterea necesse sit ignorari & a quo, & quam diligenter habita observatio fuerit.

Sed hæc quidem eo pertinent ut appareat quam nullo fundamento Mengoli suspicio nitatur de gnomonis altitudine perperam initio constituta. Ex hoc pot-

porro consequitur defectum illum perpendiculi a Mengolo mensuris suis taxatum partium 45, si modo nullus erat, depressæ potius post instrumenti fabricam templi testudini tribuendum. Sed cum nullum revera fuisse facit ut absque Mengoli injuria dubitare liceat examen gnomonis aliud per id temporis a Montanario habitum, de quo proximo capite dicam.

CAPUT VIII.

De examine alio quod a Montanario est habitum.

QUAM solerter atque accurate hujusce instrumenti statum expendere Casimianus Montanarius, egregius in Bononiensi Schola mathematicæ professor, haud melius declarare me posse arbitror quam si ejus ad Cassinum epistolam, cujus exemplum a Maraldo accepi, e vernaculo idiomate, quo scripta est, versam hic subjungam. Data est Bononiæ die 8. Februarii 1673.

Ut primum accepi literas tuas animum ad ea adjeci quæ maxime necessaria arbitror sum uti hanc meridianam lineam adversus Zoslos hæc vindicarem; cuius rei oblata est occasio cum vir nobilis Franciscus Andrea Neapolitanus, celebris in ea urbe jurisconsultus, idemque omni literarum genere ornatus, Romæ, Florentiæ, ac tota Italia notissimus, Bononiæ degeret, ubi ad mensem est diversatus. Primum ergo privatim cum Augustino Fabio, ac cum adolescente quodam, qui curatoribus adri Petronii a rationibus scribendis est (is adolescens intima familiaritate Mengolo est conjunctus, ac cum ipse visurus quæ agerentur sponte se nobis infinuasset, non rennuimus, quando præsertim nil agi poterat quin ipse reseisset) cum hæc ergo perpendiculum, catena & regulis liqueis nexa dimensi sumus, ejusque altitudinem quam exactissimam invenimus, tametsi nonnulli vulgaverant Mengolum ejusmodi catena usum diffidum in eo invenisse partium 40. Ubi summum hunc consensum perspexi, Senatores plures, aliosque, amicos aut horum studiorum curiosos viros invitavi, in quibus Franciscum illum Andrea, qui Auxonto valde amicus est, ac coram his fabulam, quod ajunt, apparatu scenico egi, iis omnibus peractis quæ subnexa epistola huc narratio continet, quam narrationem non statim ad te misi, quod nondum libramenta suppetassent, neque scriptum ipsum absolvissem. Ceterum inter experimentum ipsum capiendum singulis qui aderant omnium quæ agerentur cognoscendorum potestatem feci, nec quisquam in scriptum retulis quin antea adstantes omnes elata voce interpellassem res ne ita esset; quapropter narro tibi: experimentum hoc & pluribus os oclusis, & inter Senatores, atque adeo inter omnes rumorem virtutis tuæ valde secundum excitavit. Nunc ad concinnandum opusculum quoddam materiam præparo. In eo opusculo fabricam Gnomonis, ejusque usum, examen ac defensionem necnon observationes eo habitas completi cogito. Titulus erit ferme ejusmodi: Bononiensis meridianæ, seu Casimianus Gnomon in Divi Petronii æde Bononiæ erectus, a G.M. descriptus explicatus expensus ac vindicatus, adjectis.

jectis....centuriis observationum eo actarum &c. Habes ex titulo qua mihi abs te suppeditari opus ferat, praesertim de instrumenti usu. Illud inter cetera succurrit ut paulo explicatius doceas de observatione tua circa telluris ambitum isthic habita. Ad haec cum de poli altitudinibus agere cogitem, quas altitudines Monarius singulis annis alias esse vult, atque ex eo eclipsiae mutationes explicat, quam cum Ricciolio immobilem ponit, velim observationem Uranoburgi habitam tuasque de illa meditationes ad me mittas tum vero quacumque poteris alia de re hac universa; quamquam est sane unde horum sententia labefactetur ex variata tropicorum distantia, qua vel si poli altitudo mutetur maximam nihilominus declinationem mutari offendit. Item de his quae ad apogaeum attinent, quod in operibus tuis an immotum sit dubitare te significas &c. Narratio autem cujus in epistola meminit est huiusmodi.

Anno 1673. Januarii 30 subsequenti vespere in Divi Petronii Bononiae, praesentibus Achille Volta, Angelo Michaele Vastavillano Antonio Bovio Senatoribus, necnon Comite Valerio Zano, Andraa Bovio, Doc. Ulisse Gonzadino, Abate....Grassio, Doctore Francisco Andraa, Augustino Pinchiario Bononiensis Provinciae a litibus iudicandis, Paride Maria Grimaldo, Doctore Caspare Linder,.....Sega, Doctore Mamio, Archipresbytero Victorio, Doctore Marcello Malpiggio, Doctore Augustino Fabio, aliisque plurimis.

Doctör Geminianus Montanarius ut gnomonis, a clarissimo viro Jo. Dominico Cassino in ea aede constructi statum recognosceret primum ex centro foraminis gnomonis, quod est in tessitudine navis orientalis filum demisit, ac de eo ferreum globum suspendit unciarum circiter 12 semis pondo, cui globo adferruminata erat cupis deorsum ad perpendicularum spectans ut in schemate (Fig. 5.); globo autem post plures circuitus atque oscillationes ad quietem reducto, manifesto apparuit centrum gravitatis globi innuere ipsum initium lineae meridiana ad duas tertias crassitudinis regulae ferreae occidentem versus, ac propterea a medio regulae sexta baud amplius ejus crassitudinis parte declinare, quod nullius est momenti.

Posthaec catenam e pluribus regulis ligneis inter se se confixis, ac circa juncturas diductilibus compactam ad foramen usque attollendam ut ejus laminam tangeret, eoque loco sistendam ac firmiter alligandam curavit. Dehinc catena sibi relicta ut libere penderet, eaque nonnihil vibrata, atque attracta, ad duas horas expectatum quo in juncturis probe distenderetur. Tum vero agnitum est catena longitudinem minorem esse altitudine perpendiculari, quod a lamina ad punctum illud in pavimento pertinet, quanta est crassitudo julii argentei, ac semiboli aerei, quae altitudinis totius partes sunt centesima millesima baud amplius novem; itaque explorata lamina crassitudine, eaque inventa partium 6, ac dimidio novem illis partibus adjecto, fiebat defectus catenae a gnomonis perpendicularo partium omnino duodecim. Demissa igitur catena eaque secundum meridianam lineam extensa ac valide attracta, ut tensionem eandem servaret; quam suspensa habuerat, primum animadversum est cum ad ejusmodi statum reducta foret, quantacumque deinceps vi traheretur non plus in longitudinem distendi posse quam crassitudine numi argentei capitati (ut testione) ac cum iterum sibi relinqueretur ad priorem dimensionem reverteri. In eo itaque statu qui ipsi naturalis est non sine omnium admiratione patuit illam particulis adamussim duodecim (hoc est summa ex julio argenteo, semibolo

D

aere,

areo, & dimidia lamina crassitudine) deficere, quominus quinquaginta lapidum, ad duas perpendiculari centesimas dimensionum, longitudinem aquaret; id quod omnibus quotquot aderant suis oculis intueri, ac utrumque catena caput diligenter quantum vellent una recognoscere licuit; nec quisquam fuit quin hunc tantum dimensionum consensum summo opere admiraretur, cum instrumentum ante annos 17 constructum ne ad iussu quidem argentei crassitudinem distiatum cerneret.

Pergit posthæc Montanarius & meridianæ lineæ librationem eadem nocte a se peractam, dum catena de foramine penderet describit, quo opere defectus aut excessus secundum altitudinem punctorum aliquot lineæ a perpendiculari puncto deprehendit, eos tamen non valde notabiles, quemadmodum in tabella hic subiecta apparet, cui & correctiunculas adjeci distantis a vertice ea ex causa adhibendas; reliqua vero lineæ puncta præter hæc recte omnia habere comperit aut certe a recto aberrare minus una particula quod ad observationes nihil est.

Sciendum est autem librationem hanc in regula meridianæ ferrea a Montanario peractam, non in marmoreis, secus atque egomet opinatus eram, atque adeo scripto mandaveram in enarratione postremi examinis hujusce instrumenti a me habiti anno 1722, quæ enarratio extat in commentariis Bononiensis scientiarum instituti ante annos aliquot editis. Ex eo fieri potest ut correctiunculæ distantiarum a vertice, quas in hac tabella tradidi minime exactissimæ sint; verum de hoc infra agam quum postremum illud instrumenti examen hic denuo referam.

Ceterum quod perpendiculari longitudinem ex medio crassitudinis laminæ, in qua foramen est, Montanarius desumpserit, quasi in medio illo plano foramen ejusque centrum spectandum esset, nescio quam recte factum; nam quantum ex Cassini dissertatione anno 1695 de hoc instrumento edita colligo (pag. 9.) planum ipsum foraminis neque in medio crassitudinis laminæ, neque uti nunc, in infimo ejus plano, sed in supremo positum fuerat, ubi conica illa apertura in angustum definebat. Verum hæc differentia nonnisi particulis tribus perpendiculari longitudinem majorem efficit, quam quæ a Montanario sumpta fuit, quod parvi est momenti.

Jam vero quid de duabus hisce inter se se tam aperte pugnantibus Mengoli

ac

Centesima altitudinis perpendiculari in linea me- ridiana.	Libramen- ti vitium.	Correctio adhibenda distantis a vertice.
	Particula.	sec.
60	6 alt.	6 ad.
66	4 alt.	3 ad.
80	5 depr.	4 sub.
106	13 depr.	14 sub.
114	13 depr.	14 sub.
126	9 depr.	9 sub.
138	7 depr.	7 sub.
148	7 depr.	6 sub.
156	2 depr.	2 sub.
176	2 depr.	2 sub.
182	14 depr.	14 sub.
190	9 depr.	8 sub.
200	2 alt.	1 ad.
212	3 alt.	2 ad.
224	6 depr.	5 sub.
232	6 depr.	5 sub.
250	6 depr.	4 sub.

ac Montanarii dimensionibus statuendum esset diu anceps hæsi, quod neutri clarissimorum virorum fidem adhibere possem quin alterius aut dexteritæ, aut solertię, aut etiam fidei detraberem; neque hæc sane dubitatio modicum ad observationum usum momentum habebat, cum alterius examen perpendiculum particulis 45 iusto brevius ostendat (id quod serupuli unius primi cum triente in distantia Solis a vertice differentiam inducere quandoque potest) alterius vero nihil quicquam deficere, quinimo (si quæ paulo antea dixi attendantur) particulis tribus abundare evincat; neque vero hæc a temporum diversitate concillari poterant, cum Montanarii experimentum; quemadmodum ejus literæ testantur, post Mengoli dimensiones sumptum fuerit, nisi forte existimamus perpendiculum eo temporis intervallo in pristinum iustumque positum nullius ope se se restituere potuisse.

Sane ut Mengolo assentire facere videbatur Cassini ipsius testimonium, qui instrumenti hujusce vicissitudines in ea quam sæpe memoravi historia (pag. 17) enumerans, perpendiculi depressionem a Mengolo & Monario annis 15 post gnomonem constructum inventam, ac particulis 45 taxatam, subinde vero foraminis laminam non ante annum 1689 a Gulielmino restitutam memorat, de Montanarii vero examine anno 1673 habito nihil memorat. Cum ergo ea res animi suspensum me haberet, Cassinum uti solebam anno 1704 per Maraldum de eo rogavi, Maraldus hæc respondit: *Quæ Cassinus in tractatu de meridiana ista linea scripsit pag. 17 & 18 circa gnomonis altitudinem, particulis 45 immutatam, ex Mengoli & Monarii relatu scripsit, quem certum arbitrabatur, neque tunc illi succurrit memoria Montanarii ad ipsum epistola anni 1673. Ea hæc liquet Montanarium summo studio ac coram pluribus viris præcipuis eam altitudinem expendisse, & exactam comperisse. Montanarii experimentum nonnisi post illud tempus sumptum est quo tempore Mengolus ea de instrumenti vitio per civitatem vulgaverat, qua deinde libro suo inseruit. Epistolam Montanarii ad Cassinum hic habet.*

Manifestum est igitur nihil momenti ad Mengoli assertionem a Cassini auctoritate accedere posse, quando Cassinus in ea re Mengoli ipsius auctoritatem, est sequutus. Neque vero mirum cum tanto temporis intervallo illam gnomonis sui historiam conscriberet, aliqua illi excidisse, quæ ad rerum potius gestarum tempora distinguenda, quam ad ipsarum veritatem cognoscendam attinerent. Vere enim dixit vitium in perpendiculo inventum, hocque a Gulielmino restitutum, sed cum Montanarii examen memorix tunc illi non obversaretur, vitium illud ad Mengoli tempora retulit, quod tamen nonnisi post aliquot annos contrahi potuit, & demum a Gulielmino deprehendi. Et vero nullum ejusmodi vitium fuisse anno 1673, quin etiam circiter annum. 1679, observationibus ipsis inter se se collatis (quando certior ratio occurrebat nulla) evicisse me arbitror, quemadmodum inferius ostendam; jam enim experimentorum historiam prosequor, & ad Gulielmini tempora per-

CAPUT IX.

De gnomone per Gulielminum expenso, ac restituto.

Evolventi mihi observationes omnes hoc heliometro a Montanarii examine deinceps habitas quasvisque vel autographas reperi, vel ab aliis descriptas accepi nihil ad plures inde annos invenire contigit quod ullam de instrumenti labe suspensionem ab his qui observationes agerent concepiam significaret. Neque ex eorum tantum silentio conjecturam feci, quæ fallax esse poterat, sed ex astronomicis calculis qui multi in his autographis occurrunt, quoque diutius ad exquirendam Solis longitudinem subducebantur, manifesto perspexi quam firma illis esset de recto gnomonis statu persuasio, cum nullam tangentibus observatis correctionem uspiam adhibitam invenirem (si eam quæ a foraminis diametro pendet excipiamus) quæ tamen necessario aliqua adhibenda fuerat si instrumentum corruptum, ac præsertim foramen particulis illis 45 a Mengolo definitis collapsum opinarentur.

Prima mihi vitiati gnomonis occurrit mentio ad diem 8 Julii 1684 in adversariis Dominici Gulielmini, insignis in Bononiensi gymnasio mathematici, perpetua mihi memoria recolendi, quod meus in hisce studiis institutor fuerit. An autem mensuris ab se actis id deprehenderit, an alia quapiam ratione conjecerit certo affirmare non possum, nulla enim nota diei illi adscripta est alia nisi hæc: *S: P: guasta* scilicet: *in meridiana Sancti Petronii depravata*; facile tamen inducor ut existimem Gulielminum ab observationibus ipsis, quas per eos dies habebat edoctum instrumenti corruptelam agnovisse, illæ etenim a Cassiniana Solis longitudine (cui alie antea habitæ quamproxime respondere consueverant) magis dissident quam ut possit sive observandi fallaciis, sive computi quo longitudo inquiritur elementis imputari.

Eo autem certius de hac re iudicium ferre potuit Gulielminus quod alius illi id temporis gnomon præsto esset, quo Solem iisdem diebus vel ipse vel per socios observans instrumenta inter se se conferret. Etenim jam inde ab anno 1674 in ædibus patriciæ gentis Vassæorum a Petramellaria meridianam aliam lineam Cassinianæ similem licet perpendiculo longe breviori aptatam duxerat Montanarius, quam Jo: Antonius Vassæus Senator eleganti opere marmoreo atque æreo exornaverat. Erat præterea in illis ædibus horologium oscillatorium, & quadrantale instrumentum sideribus observandis, & astronomica suppellex alia. Eius rei gratia Montanarius ipse, Mengolus, Gulielminus sæpe illuc accedere, nocturnas etiam observationes Lunæ aut stellarum instituire, præsertim vero meridie tangentes limborum Solis ex ea linea notare consueverant, quarum observationum aliquot in eorum adversariis aut schedis inde descriptis inveni; eas in primis quæ eo ipso mense Julio anni 1684 actæ fuerant, quum magna Solis eclipsis immineret. Sunt autem tangentes correctæ diei 6 Julii eo gnomone 40615, & 39580, & quibus distantia centri Solis a vertice

ex refractionibus & parallaxibus Cassinianis emendata sit gr. 21. 51. 17, quæ porro ex tangentibus eodem die ad Divi Petronii notatis colligitur gr. 21. 52. 11, quemadmodum infra in earum serie apparet; unde longitudinem Solis elicuit Gulielminus gnomone Vassæano grad. 15. 1. 57 Cancrî, nempe unico scrupulo majorem Calliniano Mezzavacchæ computo grad. 15. 0. 36, cum ex tangentibus ad D. Petronii observatis prodeat decem fere scrupulis major nempe gr. 15. 10. 1, atque eadem præterpropter discrimina existunt & succedentium dierum observationibus. Hoc ergo, opinor, indicio Gulielminus gnomoni qui ad D. Petronii est, aliquam illatam labem sensit, ac notam illam diei 8 Julii adscripsit.

Quo autem vitii genere instrumentum id temporis depravatum esset, aut quampridem illi id quodcumque erat corruptelæ accidisset, facit observationum paucitas ut & investigatu sit difficile, & tamen minus necessarium. Equidem verosimile mihi sit haud unam errorum fuisse causam, nec tantum in foraminis lamina sed & in linea ipsa quærendam, dum perpetuo hujusce attritu alii lapides sensim deprimerentur, alii fortasse exsiliirent, neque eum servarent positum quo singuli ad aquæ superficiei libranientum exacti fuerant, quod malum a Montanario jam anno 1673 in regula ferrea, uti diximus deprehensum, ac forte temporis decursu auctum, observatoribus perspectum esse potuit, licet non ante annum 1684 adnotatum. Plane post annum 1676 observationes hoc gnomone ad 1679 perraræ sunt, inde vero ad 1684 prorsus nullæ, ac rursus ingens inde est lacuna ad annum usque 1690, cum tamen toto eo tempore plures ad Vassæorum gnomonem habitas fuisse appareat, quasi ejus qui ad Divi Petronii est usum, ob suspectam ejus fidem paulatim intermiserent.

Ut cumque sit, minime dubium esse potest quin anno 1689 centrum foraminis a perpendiculari per initium meridianæ linæ ducto nonnihil detortum, atque una depresso foret, quando id sibi perspectum, ac propterea laminæ restituendæ negotium ab ædiliū magistratu sibi demandatum fuisse, idque eodem anno effectum se dedisse testatur Gulielminus in appendice ad Cassini dissertationem anno 1695 editam, pag. 38. Hoc tamen ita interpretari licet ut statim quidem operi manum admoverit, sed non ante proximum annum absolverit. In ejus enim autographis ad diem 13 Aprilis 1690 *perpendicularum jussu brevius esse, ac fortasse laminam in qua foramen est, nonnihil ad austrum vergere* diserte notat; ad diem vero 27 ejusdem mensis *radius certissime breviorum, nec vero laminam horizontalem esse memorat*; Kalendis Junii centrum foraminis suo loco (opinor in perpendiculari directione) *positum, sed differentiam altitudinis censei particularum decem*; postridie ejus diei *gnomonem quatuor particulis altiorum ait*; die 6 etiamnum talem esse confirmat, denique die 10 Junii in adversariis: *gnomone, inquit, recte, ut videtur constituto, & in libello alio in quo dietim computum ex observationibus inire solebat, quæ ad eum diem spectat actam ait gnomone recte se habente quoad omnia*. Quibus omnibus manifestum sit Gulielminum per id temporis perpendiculari restituendo operatum, denique paulo ante diem 10 Junii 1690 supremam huic manum imposuisse.

Etsi vero sublatum erat perpendiculi vitium, illam tamen quam dixi marmorum labem & agnoscit, & etiamnum mansisse in ea appendice memorat, ac propterea correctione aliqua identidem opus fuisse ait, quo tangentium, quæ deinceps notatæ sunt mensuræ ad idem cum perpendiculi puncto libramentum redigerentur; quarum sane correctionum nulla certa tradi potest ratio, quod lapidum a recto positu deviationes aliis lineæ partibus aliæ, quibusdam etiam nullæ esse possent; neque vero aliter quam librationibus exploratas arbitror si quando ad observationes corrigendas earum deviationum ratio est habita; neque ei Incommodo occursum est ante annum 1695, quo Cassinus in Italiam reversus instrumentum ex integro instauravit, uti jam exponam.

CAPUT X.

De instrumento per Cassinum redintegrato.

Cum ergo in eo statu res esset accidit ut Cassinus in itinere quod e regia academia Parisiensi, observationes astronomicas per Italiam habiturus susceperat anno 1694 Bononiam, ex annorum sex & viginti intervallo repeteret. Ubi in hanc urbem venit nihil illi fuit antiquius quam præclarum hocce artis suæ monumentum invisere deque ejus statu cognoscere. Opportune factum ut quo tempore Sevirorum Magistratus ejus restituendi cum necessitatem agnoverat, tum consilium agitabat, Cassinus ipse & adesset, & nihil magis optaret. Illi ergo cura est demandata. Erat cum eo Jacobus ejus filius, magna tum spe adolescens, nunc (quod Pater ætate sua fuit) astronomorum ætatis nostræ facile princeps; ejus igitur ac Gulielmi auxilio ad opus est aggressus.

Primum ut instrumenti per illud tempus constitutionem agnosceret, perpendiculi altitudinem expendit, invenitque foramen nonnihil iterum a Gulielmini restitutione collapsum, nempe (quantum ex nota conjicere licet, quam notam Gulielmini adversariis ad Kalendas Februarias 1695 adscriptam inveni) depressum particulis 40. Adhæc, Cassino ipso teste, ejus foraminis centrum occasum versus detortum erat particulis 30, id quod indicio esse ait laterales tessudines medianarum motui obsecundasse, quas in se arctatas atque compressas & ferrearum catenarum eas colligantium curvatura arguit. Ad lineæ vero lapides quod attinet, qui illorum status inventus fuerit declarat Gulielmini nota alia, quam ex iisdem adversariis exscriptam subjeci: *Die 21 Decembris 1694 D. Cassinus expendit planum meridianæ lineæ, invenitque in locis solstitiorum & æquinoctiorum in eadem libella cum ipsius lineæ initio, verum e regione columnarum deprimitur particulis 31 vel 32 perpendiculi, & paulo minus ad partem australem columnæ borealis.* Jacobus quoque Cassinus in itinere Italico (editum hoc est in 7. volumine monumentorum veterum Regiæ Parisiensis academix anno 1729) non aliam lineæ depravationem quam juxta colum.

lumnas illas inventam idnuit. Cassinus vero pater in restaurationis historia addit lapides eos, qui juxta columnas duas sunt positi omnium fere maxime depressos fuisse, cum aliorum nonnulli etiam a positu pristino elati exstantesque apparerent. Idipsum vitii, quod columnarum viciniam spectat, librationibus suis in ferrea regula deprehenderat Montanarius, ac particularum 13 vel 14 taxaverat, uti in tabella capite 8. tradita manifestum est, columnarum etenim altera ad centesimas præterpropter 106 & 114, altera juxta 182 incidit, quibus locis maximam ille depressionem invenerat; unde argui posse videtur pavementum columnarum atque adeo testudinum pondere prægravatum sensum subsidisse.

His compertis, quando opus a certo aliquo horizontali plano ex arbitrio statuendo, ac meridianæ lineæ destinando inchoandum erat, satius duxit Cassinus infimum illum positum eligi, quem præterpropter lineam juxta columnas testudinum pondere depressam accepisse invenerat, lapidesque omnes reliquos eousque deprimi, ne si linea altior collocaretur majus periculum esset ne loco iterum cederet. In eo igitur posito infimo lapides singulos marmoreæ utriusque regulæ, ad aquæ consistentis superficiem libratos statuit, ac quo firmiores essent lateribus minime stratis, sed rectis gemino ordine positis hinc inde stipandos curavit, illud præsertim cavens ut neque lineæ directio quicquam immutaretur, & singula lapidum extrema justam a perpendiculari puncto, lineæque initio distantiam, adscriptis numeris indicatam servarent; pristinam enim ab eo initio ad centrum foraminis perpendiculari mensuram, atque adeo & centesimarum dimensiones ipsissimas retineri placuit. Addit Gulielmus post lapides in horizontalem situm compositos ferream quoque regulam ipsis coæquam, quod ita accipiendum est ut quoad ejus fieri posset curvatum fuerit; non enim regula illa marmorum plano examussim tota æquari poterat, quod superficiem minime ut marmora lævem & expolitam habeat, sed nonnihil sinuatam, licet hoc ob exiguas, ac fere insensibiles devexitates ægre oculis distingui possit. Præsertim vero cautum fuisse arbitror ut ipsum regulæ ferreæ initium, a quo perpendicularum sursum ad centrum foraminis erigendum erat in eodem cum marmoribus horizontis plano exacte statueretur.

Ubi linea restituta est, foraminis planum tanto inferius ab antiquo posito statui oportuit, quanto lineæ ipsius planum depressum fuerat, quo pristina perpendiculari altitudo servaretur. Foramen ergo in nova lamina excavatum est, figura uti diximus conica, angustiori parte deorsum spectante, qua parte ejus diameter centesimas millesimas particulas centum comprehendit. Tum vero e regulæ ferreæ initio erecta regula alia lignea e tribus asserculis compacta, ac lamellis duabus orichalcicis ab imo, & summo instructa, cujus regulæ longitudo centum partes ipsas primas ex linea comprehenderet, eousque depressa est lamina ut inferiori sui plano superius regulæ caput tangeret. Denique demisso e centro foraminis perpendicularo lamina horizontali motu eo adducta est unde perpendiculari directio in ipsum caput regulæ ferreæ, ejusque crassitudinis medium incideret; id autem vase cubico aqua pleno exploratum, cujus baseos centrum initio lineæ congruebat, perpendicularum enim in aqua exceptum postquam ab oscillando conquiesceret per plani superioris centrum, filo-

filorum duorum ex angulis intendorum interfectione designatum, dirigi apparuit. In eo demum posita lamina helicibus est obfirmata. Horum omnium peragendorum rationem, atque artificium univrsum accurate Gulielmus descripsit in appendice illa cujus sæpe memini, ubi & instrumenta singula in hoc opus adhibita iconibus expressa videntur. Ea instrumenta ipsa in hoc usus servari ab ædilibus scitum est.

Denique nequa deinceps in mensuris tangentium ex hac linea promendis ambiguitas oriretur, quod regularum marmorearum, præsertim orientalis, lapides aliqui temporis decursu attriti, atque exesi terminos haud satis definitos haberent, regulam ipsam ferream ad singulas altitudinis centesimas incisuris discriminandam curavit, novamque laminam ad caput lineæ ubi nunc extat statuendam, qua lamina partes altitudinis centesimæ millesimæ non ut antea, denæ, sed singulæ dignosci possent; utrumque exquisita arte effectum.

Ceterum cum ea ætate celebris inter geographos agigaretur quæstio an terrestrium meridianorum certa esset ac constans directio, an vero, quod nonnulli ex antiquarum observationum cum recentioribus collatione suspicabantur, aliis temporibus alia, periculum illi facere lubuit de hac linea num annorum quadraginta, qui a prima ejus descriptione effluerant, intervallo quidpiam a cælesti meridiano declinasset. Cum ergo ineunte anno 1695 Januario mense ac Februario matutinas aliquot Solis altitudines, ac promeridianas totidem iis respondentes captasset, atque ex earum temporibus horologio oscillatorio notatis ipsum meridiei tempus eliciisset (correctiuncula non neglecta quam Solaris motus obliquitas per eos dies postularet) tempus hoc cum eo tempore contulit, quo singulis illis diebus ex appulsu Solaris speciei ad lineam, ejusque inde excessu, speciem ipsam a linea bissectam fuisse arguerat; neque usquam dissidium reperit quod unum vel alterum scrupulum secundum excederet, propterea lineam meridianam adhuc mire congruere agnovit.

Universe porro restitutionis hujusce opus sub æquinoctium vernum anni 1695 absolutum esse Gulielmini autographa declarant; ad diem enim 19 Martii adscriptum est in adversariis *post reaptationem perfectam gnomonis D. Petronii*, & in libello supputationum diurnalium Solis: *restituto gnomone. Divi Petronii per D. Joannem Dominicum Cassinum prima observatio fuit die 19 Martii 1695*. Etsi enim in adversariis ad diem 23 Junii notat lapidem illum in quo tangens limbi inferioris excepta est, justo depressius esse particulis 7, id tamen casu aliquo lapidi huic postmodum accidisse arbitror perfecto jam opere, neque ejusmodi suspensionem ad reliquos pertinere.

CAPUT XI.

*De postremo instrumenti examine quod anno 1722
est habitum.*

QUaecumque mihi de hoc instrumento deinceps enarranda restant, jam non ex aliorum scriptis, sed e propria memoria meisque pagellis repetenda erunt. Cum enim inter hanc seriem ordinandam obliquitatem eclipticæ ac poli altitudinem et solstitialibus observationibus quotannis exquirere cepissem, utramque autem neque antiquioribus observationibus hac linea habitis exacte respondere, nec vero singulis annis sibi constare manifesto perpexissem, de obliquitate quidem eclipticæ minus mirabar, quod eam multorum astronomorum sententiâ mutabilem esse nossem, de poli autem altitudine quid statuerem hærebam, majora enim mihi videbantur dissidia quam ut observandi fallacis tribui possent, & porro constans quædam in ea inconstantia ratio faciebat ut ne refractionum quidem vicissitudinibus id adscriberem, sed, quod unum reliquum erat, instrumentum aliquid de novo vitii fecisse suspicarer. Id vero præsertim animo mihi insederat ex anno 1699 quo per mensem Augustum ac Septembrii initium noveram templi concupationem architectorum suavis in angulis rectitudinum ab incubitis superius materia oppletam, quo latera firmiora essent, inde enim fieri posuille conjiciebam ut in testudinibus atque adeo in foramine Solem admittente commotio aliqua contigisset. Suspicionem auxerunt anno 1702. observationes Romæ interea habitæ gnomone alio permagno ac celebri, quem summi astronomi Franciscus Blanchinus ac Jacobus Philippus Maraldus proximo ante anno, Clementis XI. P. M. auctoritate ad thermas Diocletiani statuerant, quarum observationum numero ubi cum Bononiensibus conferrem differentias distantiarum Solis a vertice minime easdem nanciscebar, sed aliis anni diebus alias; quod illuc pertinebat ut præter perpendiculi labem libramentum etiam Bononiensis lineæ alicubi luxatum esse posset.

Cum ea res multos annos anxium me habuisset, ut denique mihi scrupulum hunc evellerem anno 1722 mense Junio gnomonem iterum ipsemet expendere volui, facta ejus rei ab Ædilium magistratu potestate, ac omnibus suppeditatis instrumentis, quæ a Cassiniana restauratione penes eos servabantur. Examini adfuerunt, atque adeo operam contulerunt viri studiorum omnium, ac matheos in primis laude præstantissimi Antonius Leprotus, nunc Summi Pontificis Clem. XII Medicus, Jacobus Bartholomeus Reccarius Bononiensis gymnasii anatomicus, Franciscus Zanottus philosophiæ in eodem gymnasio professor, nunc et scientiarum instituto a secretis, Joseph Antonius Nadius mihi in publico observatorio adjutor designatus, Joannes Jacobus Parma, Joannes Baptista Banderius, Joseph Bolsius Marchetus, Dominicus V Veber, Carolus Hebert Monachus Hieronymianus, aliique nonnulli qui hujuscemodi

E

studiis

studiis delectabantur. Neque vero ejus examinis enatrationem hic repetam, quæ in commentariis instituti Scientiarum ante annos aliquot vulgata exrat, sed tantum qui instrumenti compertus fuerit status summam referam, ne pars hæc in ea quam tradimus mutationum ejus historia desideretur, præsertim, cum nonnulla mihi notanda sint, quæ in illa enarratione non attigi; sed post eam editam, rem totam recogitans animadverti.

Foraminis planum erat nonnihil ad horizontem obliquatum, ita tamen ut centrum ipsi initio lineæ ad perpendicularum responderet. Ea ergo obliquitas observationes nihil turbat, sed tantum penumbra latitudinem immutat discrimine vix perceptibili, quemadmodum subductis calculis compertum est.

Suspensa ex foramine regula illa eadem lignea, qua Cassinus anno 1695 usus fuetat, invenimus eam particulis 17 deficere quo minus ferreæ regulæ caput, unde meridiana linea incipit, ab imo attingeret, ubi extremum superius regulæ ipsi foraminis centro aptaretur. Mox regula juxta ipsam lineam ita reclinata uti quam rectissime extenderetur, defectus fuit iterum partium 16 vel 17 ab initio lineæ ad incisuram centesimam, unde agnitus perpendiculari altitudinem esse ut oportet partium centummillum. Eadem longitudo a centesima ad ducentesimam incisuram est inventa.

Incisuræ ipsæ quæ infixæ in arundine ad eorum intervalla acubus exploratæ paribus admodum spaciis diffusæ deprehensæ sunt.

Denique regulæ ferreæ libratio peracta est ad binas quaslibet centesimas; hæc vero opere plures a recto positu aberrationes in ea repertæ; cum alijs locis elata, alijs depressa esset, ubi cum perpendiculari puncto compararetur. Eas differentias singulas una cum correctionibus, distantie a vertice adhibendis, quæ correctiones erroribus illis singulis respondent, apposita hic tabella complectitur. Ubi notandum æstivo solstitio Solis speciem marginibus suis incidere in centesimas 37, & 38, hyberno autem in centesimas præterpropter 243, & 249, ac propterea si utroque loco facilitatis gratia centralis tantum tangens ratio habeatur, eadem fere utrobique correctio distantie a vertice addenda constatur secundorum 14, aut circiter, quod hic monuisse in rem erit.

Centesima altitudi- nis propi- dituli.	Libramen- ti vitium.	Correctio adhibenda distantia a vertice.	Centesima altitudi- nis propi- dituli.	Libramen- ti vitium.	Correctio adhibenda distantia a vertice.	Centesima altitudi- nis propi- dituli.	Libramen- ti vitium.	Correctio adhibenda distantia a vertice.
Part.	fec.		Part.	fec.		Part.	fec.	
36	10 alt.	13 ad.	112	10 depr.	10 sub.	188	0	0
38	12	14	114	5	5	190	2 alt.	2 ad.
40	14	18	116	0	0	192	7	6
42	19	21	118	3	3	194	7	6
44	36	28	120	3	3	196	12	10
46	36 alt.	29 ad.	122	2 alt.	2 ad.	198	8 alt.	6 ad.
48	30	23	124	5 depr.	5 sub.	200	4	3
50	32	27	126	4	4	202	5	4
52	40	34	128	0	0	204	3	2
54	41	35	130	4 alt.	4 ad.	206	3 depr.	2 sub.
56	40 alt.	35 ad.	132	7 alt.	7 ad.	208	2 alt.	2 ad.
58	32	30	134	4	3	210	5	4
60	28	27	136	1	1	212	2	2
62	25	23	138	2	2	214	9	7
64	21	19	140	7	7	216	14	12
66	19 alt.	19 ad.	142	10 alt.	19 ad.	218	22 alt.	17 ad.
68	15	14	144	32	31	220	22	17
70	12	11	146	37	36	222	19	15
72	10	9	148	27	26	224	14	12
74	8	8	150	20	19	226	7	5
76	17 alt.	17 ad.	152	12	12 ad.	228	7 alt.	5 ad.
78	15	15	154	7	7	230	7	5
80	10	10	156	5 depr.	5 sub.	232	7	5
82	14	14	158	17	16	234	3	2
84	22	22	160	25	23	236	1	1
86	24 alt.	24 ad.	162	12 depr.	11 sub.	238	8 alt.	6 ad.
88	25	25	164	4 alt.	4 ad.	240	15	11
90	29	29	166	11	10	242	23	16
92	25	26	168	12	11	244	19	14
94	29	29	170	17	16	246	17	12
96	19 alt.	19 ad.	172	16 alt.	14 ad.	248	19 alt.	14 ad.
98	12	13	174	10	9	250	2	1
100	15	16	176	2 depr.	2 sub.			
102	7	7	178	6	5			
104	5	5	180	7	6			
106	2 alt.	2 ad.	182	5 depr.	4 sub.			
108	0	0	184	4 alt.	3 ad.			
110	12 depr.	12 sub.	186	2 depr.	1 sub.			

Hæ quidem sunt libramenti depravationes quas in linea ferrea invenimus,
quibus si adscriptæ in tabella correctiones adhibeantur, distantias a vertice ab
E 2 omni

omni instrumenti vitio purgatas inde elici posse sum arbitratus. Verum cum deinde rem nauc universam mecum ipse reputarem; ac Cassinianam enarrationem paulo attentius legerem; poenituit me in eo examine quod tanto studio instituissem aliquid omisisse quod nonnihil de novo scripsit mihi huic ingerebat. Non enim Cassinus sive cum instrumentum primo construeret, sive cum anno 1695 restitueret, ferream lineam, sed marmoream ad eandem cum puncto perpendiculi altitudinem exegerat, tunc (quod me fecellit) hoc ipsum punctum, sive lineæ ipsius initium, ad caput ferreæ regulæ, ac in ejus latitudinis medio statuisset. Ac quamvis Guljelmius in ea reitaurarione regulam ferream, post marmorum librationem peractam, ad eorum usque planum depressam fuisse tradat, fieri tamen nequit ut regula illa cum marmoribus exacte complanata fuerit, quæ ipsa minime plana sit, sed superficiem nonnihil inæqualem crispamque habeat. Accedit quod cum regula e segmentis pluribus ferreis constet, quæ singula cuspidibus in pavimento confixa, ac cum marmoribus calce eagmentata, nec sine aliqua vi in eo posita detenta fuisse arbitror, fieri possit ut proprio denique nisu se se restituens exiuerit, lapidibus tamen vel nihil vel minus commotis, eaque de causa ubique fere julto elatiori in ventra fuerit, quin etiam nonnullis locis scutorum ipsorum testimonio a marmoribus extans appareat, idque mihi rem hanc haud satis perpèndenti luxaturum marmorum specie imposuisse.

Esti ergo correctiones in superiori tabella traditas haud valde a vero abluere crediderim, vereor tamen ut exactissimæ sint; non enim cum observationes habemus speciei margines in ipsa regulâ ferrea, ubi ex atto metalli colore minus nitidi apparent, sed ut plurimum in marmoribus, ubi termini manifestationes sunt, cuncto notamus ac ibi lineolam margines ipsos tangentes ducimus, licet hanc deinde notam ad ferri incisuras referamus. Marmoris verò regulæ an & quantum a perpendiculi libramento aberrent, hoc est quod a me omisum doleo. In ipso certe lineæ initio, ac perpendiculi puncto ferream regulam marmoris complanatam a me inventam & meminî, & ex eo sit manifestum quod etiamnum idem cum illis planum servet. Quæ vero aliis lineæ locis marmorum constitutio esset divinare nequeo.

Hæc de experimento illo dicenda habui, ne quis ei quam supra memoravi enarrationi a me rum conscriptæ confusus mensuris nostris plus æquo triquat. Ex eo autem tempore ad hunc quem agimus annum 1734 nullam de gnomonis statu mensuram egi, non enim ejusmodi tentamenta sæpius iterare licet, quæ sine magno molimine capi non possunt. Equidem ob hæc mihi obortas suspiciones ex die 21 Aprilis 1723 his qui deinceps tangentes meridi notarent inculcavi, ut in ipsa regula ferrea potius quam in marmoribus speciei margines definirent, quo scilicet correctiones superiore anno inventæ utiles esse possent; sed neque id perpetuo ab illis servatum opinor, nec verò tam facile factum est, quod margines ægre in ferro distinguantur; ut taceam curam hanc supervacuum reddi si, quod accidisse potest, ab eo tempore regulæ libramentum iterum immutatum fuerit.

Antequam hoc caput claudam prætereundum non duxi directionem quoque meridianæ lineæ a nobis expensam, ac rectissime habere compertum. Equidem

dem nonnulla de eo experimenta cepimus eo ipso anno 1722 dum libramenta ceteraque dimensiones ageremus, sed cum mihi in eo non satisfecissem, alias experiendum sum arbitratus. Hoc ergo anno 1734 die 3 Aprilis in publico observatorio meridiem per altitudines antemeridianas, ac pomeridianas Solis accuratissime determinavimus, ac porro editis ex Divi Petronii signis indicanda nobis curavimus momenta duo temporis, quibus momentis species Solis meridianum illam & primo attingeret, & ultimo defereret, illudque summo studio cavimus ne quid temporis inter edenda signa deperderetur, quod sensu percipi posset; ac cum observatorii meridianum a Divi Petronii æde secundis temporariis præterpropter duobus in ortum vergere sat certo nobis perspectum esset, ejus quoque discriminis rationem habuimus, subductisque calculis comperimus meridiem ex linea illa vix secundo horario justo citius indicatum. Denique die 12 Novembris iterum periculum fecimus, ac meridiem secundo horario seribis in linea quam in cælo deprehendimus. Ex hisce ergo observationibus quæ in punctis lineæ adeo inter se distitis actæ sunt manifesto evincitur rectissimum esse ejus posurum, ipsique cælesti meridiano, quantum poterat accuratissime aptatum; quod idem Callinus anno 1695 ab experimentis suis invenerat.

CAPUT XII.

Quo defectu hujusce seriei observationes usurpanda, & quatenus corrigenda ob instrumenti vitia.

Nonnemio fortasse mirabitur me qui hujusce gnomonis historiam summam tantum attingere suscepim, in ejus erroribus enarrandis tam multum fuisse, nec modo vitii sed & vitiorum suspicionibus recensendis tamdiu immoratus. Qui tamen secum reputaverit quantum ad observationum usum, momenti habeat de instrumentorum constitutione certo cognoscere adeo non mirabitur, ut aliquid præterea de hac re a me addi expectet, ne videlicet in singulis hujusce seriei observationibus hætere ac superiora capita percurrere opus habeat, ut sciat quæ earum integro instrumento actæ sint, quæ vero in suspecta tempora incidant, ac correctione quapiam indigeant. Horum igitur expectationi paucis hoc capite satisfaciam.

Primum igitur observationes ex anno 1655 ad exitum saltem Januarii 1673 nulla suspitione laborare ostendit Montanarii examen, nisi forte earum aliquæ in ea lineæ loca incidant in quibus ipse anno 1673 libramentum regulæ ferreæ nonnihil immutatum invenit, quæ loca capite 8 in tabella recensimus, ac correctionem ejusmodi observationibus adhibendam tradidimus; sed ea & pauca sunt, & minimum quiddam vitata, & de vitii initio nihil liquet, nec denique, ea suspicio ad primos saltem post instrumenti constructionem annos pertinere videtur. Neque enim audiendum esse Mengolum quum ipso initio perpendiculum justo brevius effectum narrat, aut cum tangentibus ante mar-

morum

morum collocacionem particularum quinque, aut decem augmentum tribuendum hariolatur manifesto evicimus capite septimo. Sed neque est ut perpendicularum medio saltem eo tempore particulis ut ille contendit 45 decurrat, vereamur, si enim hoc ita esset distantiam tropici Cancræ a vertice secundis 30, tropici autem Capricorni secundis 31 apparenter imminutam fuisse oporteret, cum tamen illa ad annum saltem 1663 potius aucta fuerit, deinde paululum, ac longe minus secundis 30 imminuta, hæc vero ad annum 1669 vix quicquam mutata; quemadmodum ex observationum solstitialium serie infra tradenda apparebit. Neve hæc ipsæ ob aliquod lapidum vitium suspectæ haberi possint, ea marmora in locis solstitiorum ad annum usque 1694 iustum servasse positum Cassinus deprehendit, uti dictum capite 10; quibus omnibus pensatis, vel si Montanarii examen deficeret, Mengolum tamen in mensura illa agenda deceptum fuisse minime dubitarem.

Post mensem vero Januarium anni 1673 ad Martium 1679 etsi nullum experimentum captum est, quod de instrumenti statu docere possit, contra nullam esse causam quamobrem perpendicularum depravatam putemus ostendit postrema observatio diei 19 Martii 1679, quæ cum prope æquinoctium cadat, quo loco lineæ lapides ad annum 1695 nihil quicquam immutatos supra diximus, nisi perpendicularum quoque recte habuisset, superiorum annorum observationibus, quæ scilicet ante annum 1673 eodem die 19 Martii peractæ fuerant, respondere haud poterat, quibus tamen ita respondit, ut accuratius nequeat. Cum enim anno 1657 distantia centri Solis a vertice fuisset gr. 44. 45. 51, eademque anno 1670 inventa foret gr. 44. 49. 45, apparet eam distantiam tredecim annorum spatio (quorum annorum tres tantum intercalares fuerunt) auctam fuisse scrupulis 3. 54. Atqui idem augmentum fere ad unguem inventum est ex anno 1666 ad 1679, pari scilicet annorum intervallo, & intercalarium numero; fuit enim anno 1666 grad. 44. 50. 13, anno autem 1679 gr. 44. 54. 6, discrimine iterum minorum 3. sc. 53. Consensus hic plane mirus explicari sane nequit si perpendicularum vel tantillum ab anno 1673 corruptum ponamus. Reliquum ergo est ut hisce annis de lineæ plano ambigi possit; ac sane si qui lapides jam inde a Montanarii examine collapsi erant, cum nemo eos restituerit, proclive est ut potius existimemus in deterius lapsos, ac forte vitium ad alios propagatum; sed cum de hoc nil certo statui possit, unum superest ut ejus temporis observationibus tanquam minus certis utamur, nisi si quæ circa æquinoctia, aut solstitia peractæ sunt, ubi marmora suis locis ad annum 1695 mansisse diximus.

Multo vehementior de illis observationibus est suspicio quæ post annum 1679 ad diem 10 Junii 1690 in serie recensentur, quod tunc depravatio plani cum aliqua perpendiculari labe conjuncta fuisse videatur; id quod de primis saltem anni 1690 ratum faciunt adscripæ illis Gulielmini notæ; propterea minime illis fidendum. Verum eæ perpaucæ sunt.

Restituto autem die 10 Junii 1690 per Gulielminum perpendicularo, quamquam illud a suo positi iterum descivisse constet, de tempore autem non constet, faciunt tamen observationes autumnali æquinoctio ejusdem anni habitæ ut saltem ad id temporis nihil mutatum arbitrer. Die enim 23 Septembris distan-

stantia centri Solis a vertice observata est grad. 44. 48. 48, die vero eodem anni 1695, instrumento per Cassinum jam redintegrato, fuit ea distantia gr. 44. 43. 24., intervallum est annorum 5, quorum unicus intercalaris. Rursum autem anno 1700 recurrente die 23 Septembris distantia fuit gr. 44. 38. 10, ubi intervallum est iterum annorum 5, cum unico bissextili (ob diem scilicet anno 1700 ad Gregorii XIII præscriptum expunctum) decrementum vero distantie a vertice min. 5. 14, quod priori illi decremento min. 5. 24 haud male respondet. Sed & solstitium hybernium anni 1691 haud valde aberrare videtur, neque vero hæc contingere potuissent si perpendiculum minus recte habuisset. Verum si observationes illas prope æquinoctia, & solstitia excipias, reliquis per id tempus habitis, ob plani depravationem vitium subesse potest (ac multo magis aliis quæ post annum 1691 ad diem 19 Martii 1695 peractæ fuerunt) sed eorum vitiorum corrigendorum nulla est ratio.

Ex die ergo 19 Martii 1695 quo Cassiniana restauratio absoluta fuit nihil est quod deinceps de perpendiculi vitiis simus solliciti saltem ad mensem Junium anni 1722, quo mense illud recte habere comperi. Ad lineæ vero libramentum quod attinet, iis equidem tangentibus quæ ipso anno 1722, aut etiam ante aliquod temporis, notatæ fuerunt correctio adhibenda est ex tabella, quam superiori capite attuli, ita enim nisi exactissimas a vertice distantias nacti fuerimus, saltem vero propiores assequemur quam si correctio illa negligatur; verum, cum liquere non possit quampridem ante annum 1722 depravatio acciderit, ac verosimile sit eam paulatim ac aliis lineæ partibus citius, aliis serius supervenisse, tutissima ratio est si primis a restauratione annis, nulla correctione utamur, eorumque annorum observationibus magis fidamus quam quæ postmodum sunt habitæ; in illis enim vix est ut vereamur planum lineæ tam subito labefactum, præsertim cum in ejus redintegratione cautum esset ne lapides facile loco cederent.

Post examen illud anni 1722 cur perpendiculum immutatum arbitrer nulla est causa, cum nil ab eo tempore observationibus præsertim solstitialibus (quæ omnium ad hæc vitia exploranda sunt aptissimæ) accidisse videam quod & integro gnomone accidere non consuevisset. Id autem confirmari videtur a progressu observationum iisdem anni diebus habitarum, ac pari annorum numero inter se se distantium ante ac post annum 1722, uti in exemplo quod hic subijci; ubi tamen notandum diem 25 Januarii 1698 subsequenti sæculo minime dici 25 sed 26 Januarii respondisse, ob intercalarem scilicet diem anno 1700 omnium

*Distantia centri Solis a vertice
ex observatione*

*Diminutio distantia a
vertice annis 12*

		G	°	'	"
1698	25 Januarii	63.	15.	40	
1710	26 Januarii	63.	14.	15	
1722	26 Januarii	63.	12.	50	
1734	26 Januarii	63.	11.	23	

	°	'	"
1.	25		
1.	25		
1.	27		

hæc observationes consulto elegi ad rem hanc confirmandam, tum quod tria sunt continentia annorum duodecim intervalla, quod rarum est, tum quod in

ea loca meridianæ lineæ incidant quibus anno 1722 vix quicquam vitii in libramento irrepperat. Manifestum est autem si foramen Solem admittens post eum annum a recto positu deflexisset differentiam illam duodenis antea annis bis eandem repertam min. 1. 25 deinceps eandem redire non potuisse. An autem libramenta lapidum, saltem aliquorum, aut regulæ ferreæ (in qua ipsa ex die 21 Aprilis 1723 tangentes interdum notatæ sunt) post ultimum illud examen novis iterum luxationibus obnoxia fuerint, nihil certo affirmare possum, sed haud multum errari arbitror si post annum etiam 1722 in hunc diem correctio de superioris capituli tabella adhibeatur.

Hæc mihi singula pro temporum diversitate distinguenda atque enucleanda fuerunt, eorum præsertim gratia qui summam, uti decet, in observationibus huiusmodi subtilitatem spectant. Qui vero iis pinguiori ut ajunt Minerva habitis contenti sunt, satis habebunt si scient vix ullam in hac serie tota inventum iri, quæ solidi scrupuli primi excessu vel defectu labores, si modo ea tantum vitia spectemus quæ ob perverfam instrumenti constitutionem contrahi poterunt; quæ enim ab observandi fallaciis oriuntur hic non moror.

CAPUT XIII.

*Qui harum observationum usus fuerit in refractionibus
astronomicis constituendis.*

Reliquum nunc est ut ad eam historię meæ partem transeam quæ observationum hoc gnomone habitatum in re astronomica utilitatem, maximis cælestis disciplinæ accessionibus atque incrementis comprobata complectitur; qua in re non vereor ne qui hæc legent me argumento quod exornandum suscepi plus æquo tribuisse existiment; nihil enim afferam nisi quod indubiis ac etiamnum publice extantibus horum octoginta annorum monumentis ratum testatumque sit. Ordinar autem a refractionibus astronomicis sine quibus nihil de vero siderum positu eorumve motu subtiliter statui poterat. Refractiones equidem Ptolemæus subolsfecit, Valtherus experimentis comperit, Tycho mensuris tentare cepit, sed Cassinus observationibus hoc gnomone actis edoctus primus omnium a dioptriciis principiis repetiit, ac in tabulas digessit.

Vix ille meridianam hanc lineam duxerat, necdum marmoribus constraverat, cum solares tabulas cogitare cepit. Sed cum ab altitudine poli accurate determinanda ordiendum esset, neque dum satis observationum ex hoc instrumento haberet, quo ea de re decerneret; altitudinem illam per stellam polarem initio anni 1656 investigavit. Erat ea ætate plerisque omnibus astronomis persuasum nullam sideribus refractionem contingere. quæ sensu perciperetur, ubi sidus ultra gradus 25, vel ut maxime 40 ab horizonte attelleretur. Itaque hac hypotesi fretus, quæ inde a Tychnonis temporibus promanaverat, eam quam invenerat poli altitudinem absque ulla a refractionibus correctione retinendam arbitratus est, præsertim cum per idem tempus astronomi solertissimi

Ric.

Ricciolius, & Grimaldus ejusdem stellæ observationibus eam ipsissimam loci latitudinem deduxissent. Celebris est hæc utraque observatio, quippe in eodem secundo scrupulo respondens; sed de ea pluribus in loco dicam.

Hæc ergo latitudine assumpta, cum jam anno 1655 æstivo solstitio (hyberno præ valetudine non licuerat) distantiam Solis a vertice meridianam observasset, ac ne hanc quidem ulla a refractionibus limitatione indigere ex communis astronomorum sententia opinaretur, parallaxim vero Solis in tanta altitudine vix quicquam efficere certum haberet, prodiit illi distantia tropici æstivi ab æquatore, sive eclipticæ obliquitas; ex qua subinde longitudines Solis singulis diebus in linea observati supputans, ejus motus anomalias, ac celeritatem per anni tempora distributionem perspexit, ac brevi solares tabulas adornavit, earumque tabularum specimen edidit vere anni 1656, cum nondum annus agnominis constructione esset evolutus; quibus tabulis omnes Solis longitudes sibi hæctenus observatas accuratissime exhibebat. Verum postquam longitudes alias, quas a verno æquinoctio deinceps nactus fuit haud æque tabulis respondere comperit, perpendendum censuit an (quod erat suspicatus) aliquid refractionis ultra gradum altitudinis 45 superesset, quæ neglecta & poli altitudinem, & eclipticæ obliquitatem, & longitudes ipsas quotidie calculis subductas vitiaffet. Idipsum vero a solstitiali observatione hyberna anni 1656 manifestius patuit, cum tropici distantia a vertice, utcumque e Tychonico, aut Kepleriano, sive Ricciolano parallaxeon ac refractionum hypotesibus expurgata, neque assumptam loci latitudinem, neque tropici a circulo æquinoctiali distantiam antea inventam restitueret.

Ea res necessitate quadam Cassinum obstrinxit ut in astronomicas refractiones paulo solertius quam hæctenus factum erat inquireret, ac rem totam ab ipsis principiis ductam enuclearet. Multa enim de hoc refractionum negotio in astronomorum libris extabant, quæ limam poscerent; veluti quod refractiones haud satis a parallaxibus extricassent, ac propterea in eadem apparenti altitudine aliam refractionem pro alia stellarum a centro telluris distantia constituisent; quod singularum refractiones ad certos tantum altitudinis fines protulissent, ac alia nonnulla neque ut videbatur rerum naturæ, neque sibi ipsis consentanea tradidissent. Ad rem igitur hanc explicandam nil aliud sumpsit quam quod plerisque omnibus philosophis summo consensu receptum noverat, nimirum: crallum aerem telluri ad certam distantiam circumfusum esse, cujus aeris superficiem sphaericam ubi radius quispiam a cælestibus corporibus promanans oblique permearet, a directione sua detorqueretur, ac interiori aliam viam iniret, qua aerem ipsum recta trajiceret; tum vero illud: cujuscumque e cælo radii in aeris superficie refracti distantiam a centro telluris certa sui parte decurtari. Postremum hoc in eam legem recidebat quam Cartesius de constanti sinuum in refractionibus proportionem haud multo ante vulgaverat, ac Cassinus ipse multiplici experimento in plurimis transuicidis corporibus cum solidis, tum fluidis instituto, certissimamprehenderat.

Ex hisce principiis duobus rem universam confici censuit; modo & illius decurtationis ratio, & semidiametri sphaeræ aeræ in qua refractione contingit ad telluris semidiametrum proportio nota esset. Hanc vero utramque ex

datis duabus refractionibus, quæ altitudinibus duabus apparentibus responderent invenire aggressus est: arduum sane problema cum ob geometricæ effectus difficultatem, tum vero ob refractionum illarum quas prænotci atque assumi oportebat incertitudinem, præsertim si eas in Sole ipso investigandas susciperet, cujus parallaxis ea ætate incomperta, aliisque astronomis aliter taxata, ita indaginem hanc omnem turbabat, ut in ea persequenda nil tanquam certum exploratumque sumi posse videretur. Neque enim Solis declinatio, neque poli altitudo, quibus arcubus (una cum angulo vel horarii, vel verticalis circuli cum meridiano) tanquam notis ad refractiones exquirendas astronomi utuntur, satis perspectæ esse poterant, quod eorum arcuum hic refractione adhuc ignota, ille vero & parallaxi involvi posset; neque demum ubi vera altitudo ex calculis demum comperta foret, liquere poterat quantum illi parallaxeos nomine subduci oporteret, ut residui differentia ab observata altitudine refractioni adscribi posset.

Verum cum ab aliis observationibus ipsi suboluisset Solis parallaxim permodicam esse, quæque infra scrupula secunda duodecim consisteret, id hypoteseos loco sumere non dubitavit, ac subinde ipsarum refractionum indaginem aggressus pluribus, ut credi par est, tentamentis, rem eo perduxit ut non aliter omnia inter se se coherere ac conspirare posse agnoverit, quam si altitudo superficiei aeræ, in qua radiorum sit refractioni poneretur 6095 earum partium, qualium telluris semidiameter 10000000, decurtatio autem distantie radii cujuslibet a centro terræ ex refractione orta fieret partium 2841 qualium distantia ipsa 10000000; his enim positis tales in unaquaque altitudine refractiones prodibant, ut & elevatio poli per stellam polarem inventa (quam ipsam elevationem a refractionum fallacia castigandam apparebat) eadem atque e solstitiorum observationibus similiter correctis eliceretur, & refractiones ipsæ solstitiales meridianæ horizontali refractioni observationibus aliis sibi exploratæ responderent.

Ac ne quid scrupuli ob neglectum in hac methodo discrimen opticæ refractionis ab astronomica suboriri posset, ex illis ipsis quas constituendas invenerat linearum proportionibus perspicuum fiebat angulum illum quo radius æreæ subintrans a recto tramite deflectitur, quique opticorum est refractionis, astronomicæ refractioni perpetuo æqualem esse, nempe angulo illi quem in oculo observatoris radius ipse refractus cum ea linea comprehendit quæ inde ad stellam recta ducitur; quod scilicet tam modicus sit ejus radii ad oculum usque trajectory, ac obliqua adeo ad stellam positio, ut ne in Luna quidem, quæ omnium terris proxima volvitur, eorum angularum differentia sub sensum caderet; unde & illud denique efficiebatur refractiones a se inventas & Soli & Lunæ & Stellis omnibus tuto easdem adhiberi, ubi per radios refractos eadem altitudine spectarentur.

Ceterum ne de exigua illa quam assumpserat Solaris parallaxeos quantitate diu anbigendum esset effecit haud multo post tum Cassini ipsius cum aliorum Regiæ academiciæ Parisiensis astronomorum solertia. Horum enim observationibus quas anno 1672 in stella Martis instituerunt, comperta est parallaxis Solis in horizonte secundorum præterpropter decem; id quod Maraldus iteratis

anno

anno 1719 experimentis confirmavit, ac astronomi plerique omnes ratum deinceps habuerunt, aut certe tam parum ab ea determinatione discesserunt ut perexiguum discrimen in refractiones inde manare possit. Propterea Cassinus in præclaro illo commentario de elementis astronomicis suæ refractionum tabulæ eas parallaxes adscripsit quæ decem secundorum parallaxi in horizonte responderent. Ex hac tabula eam desumpsi quam supra tradidi capite quarto.

Ne quid omittam, illud quoque Cassinus tentaverat ut in Kepleriana hypotesi, quæ Soli parallaxim horizontalem minuti unius decernit, solstitiorum ac polaris stellæ observationes conciliaret. Id autem minime succedebat nisi refractionis alii anni tempestatibus alia poneretur. Itaque ex hac assumptione triplicem refractionum tabulam elicit, æstivam, æquinoctialem, & hyemalem, quæ si suis quæque temporibus usurparentur, ac cum Kepleriana parallaxi componerentur, omnia iterum perbelle responderent. Rursum enim elevatio poli tam e stella polari, quam e solstitiis eadem prodibat, licet ab illa nonnihil diffidens, quæ in priori hypotesi inveniebatur, eclipticæ vero obliquitas, utra hypotesis eligeretur nihil admodum variabat. Extat triplex illa tabula, adjuncta ad Malvasiæ ephemerides anno 1662 editas; ubi refractionis quæ æstiva nuncupatur eadem ad unguem est atque in priori hypotesi. Adjecta sunt præterea a Cassino exempla aliquot quibus manifestum fieret elevationes poli, tum a se se Bononiæ tum alibi ab aliis e stella polari deductas, aptissime in eas quadrare quæ e tropicis observationibus eruuntur, si refractiones & parallaxes de tribus illis tabellis depromantur, secus plurium minorum discrimina inveniri. Verum hæc eadem omnia priores illæ refractiones, & parallaxes præstant.

Ex eo ergo tempore Cassinianæ refractiones ab astronomis tractari ac experimentis probari cæptæ, ac brevi plerisque omnibus persuasum fuit Tychonicas antiquandas, ac refractionem aliquam vel in iis altitudinibus agnoscendam quæ supra gradum 45 ad verticem usque numerantur; cui rei cum pene unus repugnare videretur Ricciolius, novamque hanc Cassini methodum in astronomia reformata exagitasset, hic & objecta diluit, & inventi sui rationem, omnem explicuit, præclara epistola ea de re conscripta, quæ adjuncta est ad Montanarii ephemerides anni 1666.

Verum cum de eo ambigi adhuc posset anne refractiones pro locorum aut tempestatum diversitate diversæ forent, ex quo tabulæ usus aut minus communis aut minus certus efficeretur, periculum facere lubuit num refractiones in Europæa temperie conceptæ maximis quoque zonæ torridæ æstibus aptarentur. Ejus præsertim rel explorandæ gratia Richerius a Parisiensi academia in Cayennam insulam est delegatus, quæ insula ab æquatore grad. 4. 56 haud amplius in septentriones distat. Cum ergo is annum ibi fuisset ac plurimas astronomicas observationes inde in Galliam retulisset, liquido apparuit si altitudines Solis ab eo captatæ a refractionibus ex Cassini tabula exfolverentur eadem fere obliquitatem eclipticæ restitui, quam Bononienses observationes exhiberent, secus si ea correctio negligeretur, atque hinc magnum ad Cassinianæ tabulæ fidem momentum accessit; deinceps enim astronomi unanimi fere consensu eam adoptasse, aut parum certe inde mutasse nisi sunt, veluti in Ger-

mania celeberrimus Kirchius, in Anglia consummatissimus observator Flamsteedius, in Italia vir cum astronomiæ tum aliarum disciplinarum laude præstantissimus Blanchinus, alique, licet hic postremus ex quibusdam stellarum observationibus refractionem hyeme nonnihil augendam suspicatus sit.

Aliquam tamen esse in minoribus ab horizonte altitudinibus refractionum, inconstantiam pluribus postmodum experimentis compertum fuit, contra atque accidit cum ad gradum præterpropter vicissimum ventum est. Quin & illud agnitum radiorum per atmosphæram semitas minime rectas esse, sed curvas. Hoc vero argumentum utrumque luculenter pertractavit Cassinus filius in commentariis Parisiensis academix anni 1714, ubi & in tabella refractiones tradidit quas ex hypotesi trajectionis radiorum curvilinearæ supputavit assumpta refractione eadem horizontali quam Pater posuerat, hancque tabellam observationibus a se habitis accuratius respondere ostendit. Summus quoque ille memoria nostra philosophus ac geometra Isaacus Eques Neutonius tabulam, aliam ex natura ipsa curvæ radiorum erutam concinnavit, quam Edmundus Halleyus astronomorum ætate nostra nulli secundus Regiæ societatis Anglicæ transactionibus anni 1721 inseruit. Denique ne omnes recenseam extant perinsignis astronomi Philippi Hiræi refractiones inter ejus tabulas evulgatæ, quas refractiones sibi ab observationibus probatas testatur. Verum harum tabularum omnium, si Hiræanas excipias, dissidia supra quintumdecimum, aut vicissimum altitudinis gradum permodica sunt, & Cassini Patris numeri medium fere tenent, quemadmodum ex ipsarum tabularum collatione apparet quas huic capiti subieci. Seorsim etiam adjeci tabellam parallaxeon Solis, ex Cassini, Hiræi, atque Halleij sententia.

Fecerunt præterea observationes nonnullæ intra circulum arcticum habitæ ut longe majores in ea zona quam in hisce regionibus nostris refractiones censerentur; cujus problematis resolutio expectanda videtur a celeberrimis fratribus Nicolao, ac Ludovico Islæis, qui cum in Imperiali academia Petropolitana astronomica ac geographica provincia fungantur, multasque in amplissima illa ditione locorum latitudines ab observationibus definire susceperint, de hoc præsertim refractionum negotio certi aliquid constituere sedulo student. Mihi quæ hæcenus de hoc argumento in academix illius commentariis edita sunt perpendenti, vix quicquam diversitatis a refractionum nostrarum, quantitate inventum est; si enim magnum quiddam discriminis intercederet, cum illi modo stellas ad Boream positas, modo Solem aut stellas alias ad austrum observavetint, errorum summa in dissidiis altitudinum poli appareret, quæ dissidia vix ulla sunt.

Hæc quidem de refractionum astronomicarum invento paullo fufius sum profecutus, ut appareat quantum huic de quo agimus instrumento astronomia debeat, cum ab observationibus eo potissimum peractis & illarum exquirendarum occasio & probandarum facultas primum oblata fuerit. Quæcumque vero de his retuli maximam partem e Cassini epistolis, quas Marchio Malvasia ephemeridibus suis anno 1662, suisque Montanarius anno 1666 subjecerunt, tum vero e specimine observationum Cassini, aut ex ejus elementis astronomicis, necnon e commentario de hac meridiana linea anno 1695 edito excerpti.

<i>Parallaxes Solis ex diverſorum aſtronomorum ſententia.</i>				
Diff. a vert.	Cassi- no.	Hirzo.	Halle- yo.	Altitu- do.
G	II	II	II	G
0	0	0	0	90
5	1	0	0	85
10	2	1	2	80
15	3	2	3	75
20	3	2	4	70
25	4	3	5	65
30	5	3	6	60
35	6	3	7	55
40	6	4	8	50
45	7	4	9	45
50	7	5	10	40
55	8	5	10	35
60	8	5	11	30
65	9	5	11	25
70	9	5	12	20
75	9	6	12	15
80	10	6	12	10
85	10	6	12 $\frac{1}{2}$	5
90	10	6	12 $\frac{1}{2}$	0

*Tabula refractionum ad singulos gradus altitudinis aut distantie a vertice
ex diversorum astronomorum computo.*

Dir. a vert.	Cassi- ni Patale		Hirze		Cassi- ni Gili		Newto- ni		G
	I	II	I	II	I	II	I	II	
1	0	1	0	1	0	1	0	1	89
2	0	2	0	2	0	2	0	2	88
3	0	3	0	3	0	3	0	3	87
4	0	4	0	4	0	4	0	4	86
5	0	5	0	6	0	5	0	5	85
6	0	6	0	7	0	6	0	6	84
7	0	7	0	8	0	7	0	7	83
8	0	8	0	10	0	8	0	8	82
9	0	9	0	11	0	9	0	9	81
10	0	10	0	12	0	10	0	10	80
11	0	11	0	14	0	11	0	11	79
12	0	12	0	15	0	12	0	12	78
13	0	13	0	17	0	13	0	13	77
14	0	14	0	18	0	14	0	14	76
15	0	16	0	20	0	16	0	15	75
16	0	17	0	21	0	17	0	16	74
17	0	18	0	23	0	18	0	17	73
18	0	19	0	24	0	19	0	18	72
19	0	20	0	25	0	20	0	19	71
20	0	21	0	26	0	21	0	20	70
21	0	22	0	28	0	22	0	21	69
22	0	24	0	30	0	24	0	22	68
23	0	25	0	31	0	25	0	23	67
24	0	26	0	32	0	26	0	24	66
25	0	27	0	33	0	27	0	25	65
26	0	28	0	35	0	28	0	26	64
27	0	30	0	37	0	30	0	27	63
28	0	31	0	39	0	31	0	28	62
29	0	33	0	40	0	33	0	30	61
30	0	34	0	41	0	34	0	31	60
31	0	35	0	44	0	35	0	32	59
32	0	37	0	46	0	37	0	34	58
33	0	38	0	48	0	38	0	35	57
34	0	40	0	50	0	40	0	36	56
35	0	41	0	51	0	41	0	38	55
36	0	41	0	54	0	43	0	39	54
37	0	43	0	56	0	45	0	40	53
38	0	47	0	58	0	47	0	41	52
39	0	49	0	1	0	49	0	44	51
40	0	50	0	2	0	50	0	45	50
41	0	52	0	4	0	52	0	47	49
42	0	54	0	6	0	54	0	48	48
43	0	56	0	7	0	56	0	50	47
44	0	58	0	9	0	58	0	52	46
45	0	59	0	11	0	59	0	54	45
									Alt.

Dir. a vert.	Cassi- ni Patale		Hirze		Cassi- ni Gili		Newto- ni		G
	I	II	I	II	I	II	I	II	
46	1	1	1	1	1	1	0	56	44
47	1	3	1	15	1	3	0	58	43
48	1	5	1	17	1	5	1	0	42
49	1	7	1	19	1	7	1	2	41
50	1	10	1	21	1	10	1	4	40
51	1	12	1	24	1	12	1	6	39
52	1	15	1	27	1	15	1	8	38
53	1	18	1	30	1	18	1	11	37
54	1	20	1	33	1	20	1	13	36
55	1	23	1	36	1	23	1	16	35
56	1	27	1	40	1	27	1	19	34
57	1	30	1	43	1	30	1	21	33
58	1	34	1	47	1	34	1	24	32
59	1	38	1	51	1	38	1	28	31
60	1	42	1	55	1	42	1	32	30
61	1	46	1	59	1	46	1	36	29
62	1	51	2	3	1	51	1	40	28
63	1	55	2	7	1	55	1	44	27
64	2	0	2	11	2	0	1	49	26
65	2	6	2	15	2	6	1	54	25
66	2	12	2	24	2	12	1	59	24
67	2	18	2	31	2	18	2	5	23
68	2	25	2	38	2	25	2	11	22
69	2	31	2	44	2	31	2	18	21
70	2	39	2	51	2	39	2	26	20
71	2	46	3	1	2	46	2	34	19
72	3	0	3	11	2	50	2	43	18
73	3	11	3	23	3	10	2	53	17
74	3	24	3	36	3	23	3	4	16
75	3	38	3	51	3	36	3	17	15
76	3	53	4	7	3	52	3	31	14
77	4	12	4	25	4	10	3	47	13
78	4	33	4	46	4	31	4	5	12
79	4	58	5	11	4	55	4	27	11
80	5	28	5	41	5	21	4	51	10
81	6	3	6	17	5	17	5	22	9
82	7	47	7	1	6	46	6	0	8
83	7	43	8	7	7	32	6	47	7
84	8	55	9	8	8	18	7	45	6
85	10	12	10	20	10	6	9	2	5
86	12	48	11	26	12	2	10	48	4
87	16	6	15	44	14	46	13	20	3
88	21	4	20	43	18	40	17	8	2
89	27	55	26	35	24	19	23	7	1
90	32	20	32	0	32	20	33	45	0
									Alt.

CAPUT XIV.

*De eclipticæ obliquitate ac Bononiæ latitudine ab hisce
observationibus primum accurate definita.*

Superiori capite & refractionum exquirendarum necessitatem & inventarum successum enarravi, ac stellæ polaris altitudines cum solstitialibus hoc denique pacto a Cassino conciliatas dixi, cujus præsertim rei gratia indago illa suscepta fuerat. Quæ vero inde prodierit poli elevatio, quæve eclipticæ obliquitas, non memoravi, quod de his mihi pluribus seorsini agendum reservassem. Primum autem stellæ illius observationes tam ab ipso quam a Ricciolio habitas afferam.

Cassinus a Kalendis Januarii anni 1656 quotidie ad diem 8 in ædibus Marchionis Malvasiæ gnomone pedes 36 Bononienfes alto, quem gnomonem ad hoc ipsum erexerat, mane ac vespere stellam polarem per meridianum excurrentem sibi observatam memorat, & meridiani illius positum per maximas ejusdem stellæ digressiones accuratissime expensum.

Matutina stellæ distantia a vertice fuit	gr. 48. 2. 6
Vespertina vero	gr. 42. 57. 10

Differentia utriusque	gr. 5. 4. 56
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Dimidium, seu distantia stellæ a polo boreo	gr. 2. 32. 28
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Inde ergo distantia poli a vertice	gr. 45. 29. 38
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Cujus complementum sive elevatio poli in iis ædibus	gr. 44. 30. 22
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Templum vero Divi Petronii iisdem ædibus australius invenit	2
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Ergo elevatio poli seu latitudo ad Divi Petronii	gr. 44. 30. 20
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Ricciolius vero cum Grimaldo ad Divæ Lucie duplicem altitudinis poli indaginem, utramque per stellam polarem instituit, ac in astronomia reformata retulit libro 4 cap. 14; alteram sub exitum anni 1655 sextantibus duobus, quorum radii pedum 7, & 12

Altitudo stellæ maxima vespere	gr. 47. 2. 42
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Altitudo minima mane	gr. 41. 57. 36
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Monet hæc altitudines pluries captatas paucis interdum secundis variasse, sed earum differentiam quæ frequentius recurreret fuisse

gr. 5. 5. 6

Dimidium seu distantia stellæ a polo	gr. 2. 32. 33
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Unde altitudo poli ad Divæ Lucie	gr. 44. 30. 9
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Tem.

Templum vero Divi Petronii borealius quam Divæ Lucæ invenit ipse æstis mensuris

Latitudo igitur ad Divi Petronii

10
gr. 44. 30. 19

Altera Ricciolii investigatio partim mense Octobri anni 1655 partim Aprili 1656 peracta fuit gnomone præalto, pedum nempe Bononiensium 66.

Maxima stellæ altitudo ineunte Octobri 1655 vesperti iterato observata

gr. 47. 2. 43

Ut hanc reducat ad finem ejus anni detrahi jubet pro rata accessus annui stellæ ad polum (qui accessus est secundorum 20)

5

Fit maxima altitudo stellæ ad exitum anni 1655

gr. 47. 2. 38

Anno autem 1656 Aprili minima stellæ altitudo ter capta

gr. 41. 57. 48

Ut reducatur ad finem anni 1655 subducit

6

Fit minima altitudo exeunte anno 1655

gr. 41. 57. 42

Eodem tempore maxima nuper inventa fuit

gr. 47. 2. 38

Differentia igitur altitudinum

gr. 5. 4. 56

Ejus dimidium seu distantia stellæ a polo

gr. 2. 32. 28

Unde altitudo poli ad Divæ Lucæ

gr. 44. 30. 10

Ob parallelorum differentiam supra memoratam adde

10

Conflabitur latitudo ad Divi Petronii

gr. 44. 30. 20

a priori determinatione unico secundo discrepans, & ad unguem respondens ei quam Cassinus invenit.

Merito hic tantus observationum consensus observatoribus ipsis mirus est habitus, nobis vero eo magis admirationi esse debet postquam stellæ illius annuæ vicissitudines sunt perspectæ; notum est enim post Picardi, Flamsteedii ac utriusque Cassini observationes anomaliam quandam, Ricciolii ætate incomperatam polari stellæ contingere, qua fiat ut per annum minime æquabiliter ad polum accedat, quinimo interdum ad aliquid temporis ab eo recedat; cujusmodi aberrationes & stellis alijs communes esse, neque modo secundum declinationem sed etiam secundum ascensionem rectam aliquas esse, Maraldus etiam, Roemerus, Horreboviusprehenderunt, earumque evagationum ordinem ac leges, in parallaxi annua frustra quæsitæ, egregius nuper astronomus Jacobus Bradleyus expendit, de quo argumento nos etiam nonnulla scriptis mandavimus. Propterea ne qua hujusmodi aberratio eas observationes vitare possit quæ ad definiendas locorum latitudines haberi solent, monuit Picardus in itinere Uranoburgico, & Jacobus Cassinus in tabulis transitus hujusce stellæ per meridianum, tutissimam rationem esse si tam maxima quam minima altitudo ipsædem, aut non valde dissitis noctibus exploretur; ita enim necessitas evitatur redu.

reductionis illius, qua Ricciolius in hac postrema determinatione opus habuit, quæque si pro rata temporis distribuatur, fallax esse potest. Qui vero factum sit ut in experimentis hæc non fefellerit investigatu est difficile.

Utrumque sit, minime dubitandum quin apparas illa elevatio poli ad Divi Petronii gr. 44. 30. 20 tam proxime ad verum accederet quam observationibus accedere licet. Inde ergo Ricciolius eclipticæ obliquitatem eruerat grad. 23. 30. 20 ea methodo, quæ iis temporibus astronomis familiaris erat; ut enim refractionum suspicionem evitarent, qua suspitione hyberni tropici altitudines laborare agnoscebant (de æstivo enim nil tale verebantur) loci latitudinem ex polari stella definitam cum distantia a vertice tropici æstivi comparabant, quorum arcuum differentia est eclipticæ obliquitas. En ejus obliquitatis calculum observationi solstitiali omnium primæ hoc gnomone habitæ aptatum, neglectis refractionibus.

Anno 1655 die 21 Junii distantia meridiana apparens limbi

inferioris Solis a vertice observata est

gr. 21. 15. 38

Superioris vero limbi

gr. 20. 42. 30

Diameter Solis quanta hoc instrumento apparuit

31. 8

Semidiameter

15. 34

Apparens ergo centri distantia a vertice

gr. 21. 0. 4

Parallaxis Solis subducenda circiter

4

Distantia centri a vertice a parallaxi exsoluta, eademque

distantia tropici æstivi a vertice (quod Sol in gr. 29. 46

Geminorum positus minus secundo a tropico abesset)

gr. 21. 0. 0

Latitudo apparens ad Divi Petronii et stella polari inventa

gr. 44. 30. 20

Ergo tropici declinatio sive obliquitas eclipticæ apparens

gr. 23. 30. 20

quantam scilicet a Ricciolio hac methodo inventam memoravimus.

Hoc vero ipsum est in quo Cassinus (uti supra diximus) refractionum ultra gradum 45 altitudinis minime negligendarum necessitatem agnovit, hi namque numeri tam obliquitatis eclipticæ quam latitudinis in distantiam a vertice tropici hyberni ex observationibus inventam minime quadrabant, vel si hæc distantia a refractionibus Tychonicis, aliisve id temporis receptis emendaretur; servatis autem refractionibus & obliquitas eclipticæ, & latitudo paulo alia inventa, & solstitii utriusque observationes cum stellæ polaris altitudinibus conciliatæ sunt in hunc modum.

Die 21 Junii 1655 distantia centri Solis a vertice a refractionibus,

ac parallaxibus Cassinianis expedita (uti in serie

observationum) eademque distantia Tropici æstivi a vertice

gr. 21. 0. 23

Die vero 21 Decembris 1656 distantia centri a vertice ab iisdem

refractionibus ac parallaxibus correctæ uti in eadem

serie

gr. 67. 58. 22

Distantia Solis a tropico in gr. 0. 26 Capricorni

2

G

Ergo

Ergo distantia tropici hybernici a vertice	gr. 67. 58. 24
Distantia tropici æstivi ut supra	gr. 21. 0. 23
Vera igitur tropicorum distantia	gr. 46. 58. 1
Cujus dimidium obliquitas vera eclipticæ	23. 29. 0 $\frac{1}{2}$
Qua addita distantia tropici æstivi a vertice confit vera latitudo ad Divi Petronii	gr. 44. 29. 23 $\frac{1}{2}$
Ex stella vero polari apparens altitudo poli ad D. Petronii elicita fuerat	gr. 44. 30. 20
Subducta refractione huic altitudini debita ex tabula Cassiniana	r. 0
Fit rursus vera latitudo ad Divi Petronii	44. 29. 20

secundis scilicet $3\frac{1}{2}$ haud amplius discrepans ab ea quæ a tropicorum observationibus est eruta, ut propterea merito Cassinus veram latitudinem ad Divi Petronii atque in ipso perpendiculi puncto statuerit gr. 44. 29. 22, & veram eclipticæ obliquitatem gr. 23. 29. 0.

Ubi notandum si pro iis refractionibus ac parallaxibus quibus in hac observationum serie ad mentem Cassini corrigenda vii sumus, numeros hosce ex triplici illa tabella ad Malvasiæ ephemerides adiecta ac cum Kepleriana parallaxi conjuncta depromere lubuisset, futurum sane ut ex eo obliquitas eclipticæ parum mutaretur, quippe quæ prodiisset gr. 23. 29. 5, altitudo vero poli tam e stella polari quam e solstitiis 15, aut 18 secundis minor inde conurgeret, nempe gr. 44. 29. 5. Hac vero obliquitate nempe gr. 23. 29. 5, & poli altitudine gr. 44. 29. 5 (quos numeros Cassinus ipse tradiderat in exemplis quæ Malvasiæ ephemeridibus subiecta sunt) Montanarius, Fabrius, Guilielmus in calculis suis subducendis utebantur, antequam Cassinus parallaxi Solis accuratius constituta triplicem illam tabulam antiquasset, ac ad priores refractiones rediisset.

Atque hæc prima est veræ obliquitatis eclipticæ inventio, cum ante illud tempus astronomi cum quæ vera esset ab ea quæ ob refractionum fallacias appareret haud satis distinguerent. Ex eo tempore plerique omnes numeros illos gr. 23. 29. 0 magno hocce instrumento primum compertos ratos habuerunt, aut certe perpauca secundis scrupulis inde discesserunt, præsertim cum observationes & Bononiæ & alibi ad aliquot saltem annos deinceps habitæ eosdem comprobarent. Sed hoc ipsum mihi jam accuratius peculiari capite est pertractandum.

CAPUT XV.

*De diversitatibus quæ in eclipticæ declinatione hoc
instrumento postmodum inventæ sunt.*

Agredior hoc capite celebrem illam ac astronomorum pene omnium studiis nobilitatam disceptationem, constans ne an mutabilis sit eclipticæ ad æquinoctialem circulum inclinatio; quam nisi ab observationibus immoto quopiam, eoque maximo instrumento, quale nostrum hoc est, peractis annorum octoginta spatio dirimi potuisse, aut saltem adhuc posse arbitramur, vereor ut astronomis alia usquam ejus rei dijudicandæ ratio suppetat.

Mihi certe ut primum hæc observationes undique colligere, atque inter se se conferre, ac contendere cæpi haud difficile fuit aliquam a primis instrumenti temporibus ad eam ætatem obliquitatis eclipticæ immutationem agnoscere. Verum cum hæc ipsa immutatio cum quadam altitudinis poli inconsistentia conjuncta esset (quæ mihi res in astronomia inexplicabilis semper est visa) in plures dubitationes distrahebar, ac modo instrumenti nondum a me expensi vitia, modo observandi indiligentiam, modo aeris nostri naturam sensim variatam, modo alia comminiscabar, quæ res annos pene quadraginta animi ancipitem me habuit, atque ad opus hoc in publicum emittendum tardiores effecit; necdum satis me perspicere fateor quid denique de re hac tota certo statui possit. Verum ut ordine procedam eclipticæ variationes a poli vicissitudinibus quantum ejus fieri potest seorsim expendam.

Primum ergo en seriem distantiarum tropicarum a vertice quotquot ab instrumenti constructione ad hoc tempus colliguntur ex observationibus vel ipso solstitio habitis vel minus biduo, ut plurimum, inde disitis, reductione ad ipsos tropicos ubi opus erat adhibita ex ea tabella quam capite 5 tradidi. Ubi advertendum nullam a me in hac serie rationem habitam eorum vitiorum, quæ anno 1722 in libramento lineæ comperta sunt, ac capite undecimo in tabula recensita, tum quod de eorum temporibus non liqueret, tum præsertim quod æquales in locis utriusque solstitii ex hac causa correctiones utrique distantie tropicæ debeantur, nempe utrobique secunda 14 addenda, (quod capite undecimo admonui) ac propterea tropicorum intervallum nihil quicquam inde mutetur.

*Distantia tropici Cancrī a vertice a re
fractione & parallaxi e Cassiniana ta
bella exsoluta, ad Divi Petronii.*

Junii	G	I	II	G	I	II
1655	21	21.0.23	} media 21.0.21			
	22	21.0.19				
1656	21	21.0.20		21.0.20		
1658	20	21.0.21	} media 21.0.24			
	21	21.0.26				
1663	20	21.0.31	} media 21.0.32			
	21	21.0.36				
	22	21.0.38				
1665	21	21.0.17		21.0.17		
1667	21	21.0.23	} media 21.0.18			
	22	21.0.18				
	23	21.0.14				
1668	20	21.0.17	} media 21.0.10			
	21	21.0.8				
	22	21.0.5				
1669	19	21.0.20	} media 21.0.14			
	20	21.0.14				
	21	21.0.18				
	22	21.0.6				
1670	20	21.0.9	} media 21.0.9			
	21	21.0.18				
	22	21.0.1				
1672	20	21.0.11	} media 21.0.9			
	21	21.0.7				

*Distantia tropici Capricorni a vertice a
refractione & parallaxi e Cassiniana
tabella exsoluta ad Divi Petronii.*

Decemb.	G	I	II	G	I	II
1656	21	67.58.24		67.58.24		
1658	20	67.58.12	} media 67.58.12			
	21	67.58.13				
1659	20	67.58.8		67.58.8		
1660	20	67.58.1	} media 67.58.0			
	21	67.58.0				
1663	21	67.58.0	} media 67.58.0			
	22	67.57.59				
1666	21	67.58.7		67.58.7		
1667	22	67.58.14		67.58.14		
1668	19	67.58.14	} media 67.58.11			
	20	67.58.9				
	21	67.58.12				
	22	67.58.11				
1669	19	67.58.10	} media 67.58.13			
	22	67.58.16				

Junii	G I II	G I III	Decemb.	G I II	G I II
1673	21 21.0.14	} media 21.0.15			
	22 21.0.16				
1674	19 21.0.4	} media 21.0.9			
	20 21.0.15				
	22 21.0.8				
1690	19 21.0.56	} media 21.1.1			
	20 21.1.4				
	21 21.0.58				
	22 21.1.8				
1695	19 21.0.57	} media 21.1.3	1691	20 67.58.30	67.58.30
	20 21.0.59		1695	21 67.58.20	67.58.20
	21 21.1.9				
	22 21.1.9				
1696	20 21.0.50	} media 21.0.56			
	21 21.1.0				
	22 21.0.59				
1697	19 21.0.48	} media 21.1.3	1697	19 67.58.9	} media 67.58.11
	20 21.1.11			20 67.58.13	
	21 21.1.13				
	22 21.1.2				
1698	19 21.1.4	} media 21.1.7	1698	20 67.58.8	} media 67.58.10
	20 21.1.10			22 67.58.12	
	21 21.1.6				
	22 21.1.7				
1699	19 21.1.1	} media 21.1.5			
	20 21.1.1				
	21 21.1.7				
	22 21.1.0				
1700	23 21.0.59	21.0.59			
1701	20 21.0.57	} media 21.1.3			
	21 21.1.0				
	22 21.1.12				
	23 21.1.2				

Ju-

Junii G I II			G I II	Decemb.	G I II	G I II
1702	21	21.0.48	} media 21.0.55			
	22	21.1.7				
	23	21.0.51				
1703	22	21.1.4	} media 21.1.1	1703	21	67.58.9
	23	21.0.58				67.58.9
1704	20	21.0.58	} media 21.0.58			
	21	21.0.57				
	22	21.0.58				
1705	22	21.0.58	21.0.58	1705	20	67.58.16
					23	67.58.13
						} media 67.58.14
				1706	20	67.58.24
						67.58.24
1707	22	21.0.46	21.0.46	1707	21	67.58.17
						67.58.17
				1709	19	67.58.5
						67.58.5
1710	20	21.0.44	} media 21.0.36			
	22	21.0.29				
1711	22	21.0.38	} media 21.0.39			
	23	21.0.40				
1712	22	21.0.54	} media 21.0.53			
	23	21.0.53				
1713	21	21.0.44	} media 21.0.46			
	22	21.0.48				

Deinceps (ac forte aliquanto prius) singulis distantis tropicis tam æstivis quam hybernis hic notatis addas licet secunda 14 circiter ob depravatum lineæ libramentum, quemadmodum capite undecimo dictum est.

				1718	20	67.57.44	67.57.44
1719	21	21.0.51	} media 21.0.48				
	23	21.0.46					
1720	20	21.0.53	} media 21.0.48				
	21	21.0.43					
1721	22	21.0.36	} media 21.0.41				
	23	21.0.46					

Junii	G I H	G I H	Decemb.	G I H	G I H
1722	20 21.0.44	} media 21.0.47	1722	21 67.57.49	} media 67.57.52
21	21.0.47		22	67.57.54	
22	21.0.51				
23	21.0.43				
1723	20 21.0.48	} media 21.0.48			
21	21.0.47				
22	21.0.50				
23	21.0.48				
1724	19 21.0.48	} media 21.0.45			
21	21.0.47				
22	21.0.41				
1725	21 21.0.41	} media 21.0.31	1725	21 67.58.3	67.58.3
22	21.0.21				
1726	20 21.0.43	} media 21.0.31			
21	21.0.28				
23	21.0.21				
1727	21 21.0.44	} media 21.0.40			
22	21.0.35				
23	21.0.42				
1728	20 21.0.38	21.0.38	1728	21 67.58.12	67.58.12
1729	20 21.0.16	} media 21.0.38			
21	21.0.50				
22	21.0.49				
1730	20 21.0.32	} media 21.0.36			
22	21.0.40				
1731	20 21.0.51	} media 21.0.50	1731	23 67.57.46	67.57.46
21	21.0.53				
22	21.0.45				
23	21.0.52				
1732	20 21.1.0	} media 21.0.54	1732	21 67.57.41	} media 67.57.40
21	21.0.48		22	67.57.37	
			23	67.57.43	
1733	21 21.0.50	} media 21.0.52	1733	20 67.57.37	} media 67.57.44
22	21.0.53		21	67.57.46	
			23	67.57.49	

Ju.

Junii G I II			G I II	Decemb. G I II			G I II	
1734	21	21.0.57	} media 21.0.53		1734	22	67.57.50	67.57.50
	22	21.0.52						
	23	21.0.50						

Nemo mihi ut arbitror vitio vertet quod pro distantis a vertice apparentibus veras ipsas distantias, easque e Cassini potius quam aliorum tabulis a parallaxi ac refractione castigatas attulerim, non enim id agimus ut ipsam nunc eclipticæ obliquitatem mensuris comprehendamus, sed ut denique decernamus an illa quicquam mutetur, quæ in re perinde est veras an apparentes distantias spectemus, modo refractiones quibus ad illas emendandas utimur ex eadem perpetuo tabula depromamus.

Nunc ergo si tropica quælibet distantia æstiva cum hyberna, vel eodem vel proximis ante aut post annis observata conferatur, apparebit quæ quovis tempore fuerit tropicorum intercapedo, ac subinde eclipticæ declinatio, quæ ejus intervalli est dimidia.

Veluti si distantia tropici æstivi a vertice anno 1656 inventa gr. 21. 0. 20 cum distantia tropici hyberni ejusdem anni componatur, quæ fuit

gr. 67. 58. 24

fiet tropicorum distantia
& obliquitas eclipticæ anno 1656

gr. 46. 58. 4

gr. 23. 29. 2

si vero distantia æstiva anni 1695
cum hyberna ejusdem anni conferatur

gr. 21. 1. 3

gr. 67. 58. 20

erit tropicorum intervallum
obliquitas vero eclipticæ anno 1695

gr. 46. 57. 17

gr. 23. 28. 38

ac denique si æstiva anni 1733
cum ejus anni hyberna comparetur

gr. 21. 0. 52

gr. 67. 57. 44

emerget tropicorum intercapedo
& declinatio eclipticæ anno 1733

gr. 46. 56. 52

gr. 23. 28. 26

Apparet ergo distantiam tropicorum ex anno 1656 ad 1695 secundis 47, ad annum vero 1733 scrupulo primo ac secundis 12 decrevisse, ac propterea eclipticæ angulum cum æquatore dimidiis illis differentiis fuisse contractum; quæ discrimina tanta sunt ut nisi observationibus vim inferamus, aut observatores omnino oscitanter egisse arbitremur, aliqua dissidii causa in cælo ipso sit agnoscenda.

Non ignoro futuros qui hæc diversitates a refractionum inconstantia explicari posse arbitrentur, qui tamen nescio quam apte & coherenter ad communia experimenta dicturi sint, stellarum enim inerrantium meridianas altitudines

dines vix quicquam diversas apparere, sive noctu, sive interdiu, hac vel illa anni tempestate observentur, ut astronomi accuratissimi testati sunt, & nos in hoc Bononiensi observatorio plurium annorum usu compertum habemus, si modo variationes illas seponamus, quæ vel a lentissimo fixarum motu, vel a singularum erroribus nuper detectis oriuntur, qui ipsi errores & perexigui sunt, & annuo fere spatio iidem recurrunt. Plane in stella Sirii nihil subiacuisse quod ejusmodi suspensionem ingereret monuit Hircus initio tabularum, & Jacobus Cassinus in ejus parallaxim annuam subtilissime inquirens vix ura vel altera stellæ diametro immutatam annuo spatio altitudinem comperit, cum tamen hæc tantumdem fere a Parisiensi vertice quantum hybernus tropicus a Bononiensi abscedat. Ad hæc si aeris constitutionem aliis anni diebus aliam esse, idque in refractionibus, vel supra vicissimum altitudinis gradum aliquid ad sensum facere posse concedamus, illud tamen paradoxo simile est quod ad rem hanc explicandam assumi oportet: refractiones ex anno 1656 ad 1695, ac rursum ex hoc ad 1733 adeo mutatas ut mutatio hæc secundorum ibi 47, hic 72 discrimen effecerit; præsertim cum ex hac serie appareat minores mutationes hyberno tropico, ubi refractionis major est, quam æstivo, ubi minor, animadversas, ac distantiam tropici hujus a vertice interdum triplo magis adau. Nam quam refractionis tota quam illi tribuimus eam minuat.

Erunt fortasse alii qui instrumenti vitia vel cum primum constructum est vel cum pluries expensum incomperta, aut perperam taxata in causa esse comminiscantur. Mihi quidem astronomica instrumenta summo studio fabricanda ac pari solertia expendenda videntur, verum ubi maximam quam præstare licet diligentiam in eo positam conscius tibi fueris, morosus es, ac pene infinitum si quoties inexpectatam quiddam observando detexeris, ac rem ita esse iterato agnoveris ad suspensiones relabaris, ac fidem ipse tuam in dubium revoces. Deinde si rem sedulo perpendamus hæc de eclipticæ variatione indago ejusmodi est ut vix quicquam scrupuli ab exiguis gnomonis hujusce mutationibus oriri possit. Nam foraminis constitutionem quod attinet, nisi ejus centrum, vel in ipsa instrumenti constructione vel in ejus restitutione ita locatum singamus ut in boream, vel in austrum pluribus particulis aberraret, non efficiemus, ut tropicorum distantia solido minuto ac eo amplius varia esse possit. Id autem vitii demisso tantum perpendiculo facile adeo explorari poterat, ut nimirum sit neque Cassino, neque Fabio, neque Montanario, neque ipsi Mengolo qui instrumenti redarguendi causas quæsisse visus est, neque nobis perspectum fuisse. Porro ceteri altitudo ut diversis annis tropicorum distantiam minuto diversam exhiberet, vel partibus 1676 augenda vel 6714 minuenda foret, quemadmodum subductis calculis reperi, quod sine concemerationis totius labe atque adeo ruina fieri non potuit. Equidem fateor si altitudinem repente eo temporis spatio quod inter solstitia duo proxima intercessit depravatam singamus, paucarum particularum vitium sufficere quotantum dissidii emergat, verum si forte hoc ipsum semel contigisse opinemur, anne toties credendum est quoties distantiam illam tropicorum denuo mutatam observationes evincunt? Idem de lapidum vitilis judicium ferre licet, si forte quis horum librationibus iterato ac diligenter peractis non acquiescat;

illi enim tot, & tam variae & subitae & inter se dispaes lapidum commotiones fingendae erunt, ut vix in maceria aliqua ac ruderibus temere congestis tale quippiam contingat. Nam quod attinet eas luxationes sane exiguas quas anno 1722 invenimus, nulla earum ratio in eclipticae obliquitate, sed tantum in altitudine poli & solstitiis intelligenda, habenda est, quod utriusque loci solstitialis vitia eandem fere ad unguem correctionis quantitatem poscant, uti saepe diximus.

Reliquum est ut haec dissidia observandi difficultatibus ac erroribus tribuant, qui si eorum dissidiorum partem aliquam ab hac causa petendam existimant, facilius assentior; sin vero rem totam ex hoc explicari posse autumant, necesse est ut miras quasdam ac constantes errandi leges ab iis qui solstitiorum observationes egerunt servatas esse fateantur; veluti quod ex anno 1690 ad annum circiter 1705 æstivo solstitio nunquam minores sed perpetuo majores limborum Solis a perpendiculari distantias notaverint quam anno 1655 ac proximis inde aliis notatae sint, contra hyberno solstitio in hunc diem perpetuo fere per defectum, nusquam per excessum peccant. Sed haec ex iis quae statim subiungam sicut magis manifesta.

Nunc enim postquam eclipticae declinationem minime constantem invenimus reliquum est ut in illud inquiramus anne ejus mutationis certa ratio constitui ulla possit. Duplex de hoc ætate nostra astronomorum est sententia. Quidam inclinationem illam perpetuo minui existimant, alii vicissitudines ejus aliquas sane agnoscunt, sed eas denique evanescere atque eclipticam in priorem positum sese restituere censent, qui enim variationem omnem pernegant atque id quodcumque apparet observationum ludibris tribuunt, satis ut arbitror ex harum Bononiensium observationum ordine refelli possunt.

Priorem sententiam astronomis nonnullis olim receptam, dein recentioribus minus probatam ac pene obsoletam revexit ætate nostra eximius astronomus Eugenius Eques Louvillæus celebri dissertatione de hoc argumento vulgata in actis eruditorum Lipsiæ anni 1719, idemque argumentum pluribus postmodum succedentium annorum observationibus illustravit, quæ extant in commentariis regiae academici Parisiensis. Is ergo rem omnem ab antiquissimis Pitheæ Massiliensis temporibus repetens, ac inde ad Eratosthenem, Ptolemæum, Albategnium, aliosque, primum Arabes, tum Europæos astronomos progrediens, eclipticæ atque æquatoris angulum perpetuo, & æqualiter imminutum reperit, ita quidem ut intervallo annorum præterpropter 2000 minutis 21 decreverit; si modo veræ locorum latitudinis, quibus locis observationes actæ sunt, ratio habeatur, ac observationes ipsæ a parallaxibus Solis, quas illi perperam constituerant, necnon a refractionibus liberentur. Angulum vero illum accuratissime sibi definitum memorat anno 1715 graduum 23.28.24, unde ex illa quam tradit proportionem efficitur anno 1656 fuisse grad. 23.29.1, nempe eum fere ad unguem quem ex utroque illius anni solstitio hoc gnómone observato paulo antea supputavimus, ut propterea determinatio hæc in earum censum referri possit quas ille ad sententiam suam firmandam undique collegit. Nuper etiam opinionem eandem egregio ejusdem academici socio Godino argumentis pluribus confirmatam Lutetia ad me scripsit

psit præclarus juvenis Franciscus Algarottus & ab his, & ab optimis quibusque studiis excultissimus.

Cassinus autem etsi priorum solstitiorum quæ hoc gnomone observaverat experimento confusus eclipticæ obliquitatem annuo decremento secundorum sex minui notavit in iis exemplis quæ Malvasiæ ephemeridibus subjecit, non eam tamen diminutionis legem perpetuam statuit, neque ad antea facta tempora protulit, quinimo dissertationibus duabus, quas in eadem academia habuit, altera die 31 Martii 1672 de Massiliæ civitatis latitudine, altera die 31 Julii 1693 de altitudinis poli diversitatibus, ita sibi persuasum esse ostendit aliquam sane esse cum polorum, tum eclipticæ inconstantiam, verum evagationem omnem intra unius vel alterius minuti fines consistere. In eandem sententiam Hircæus nonnulla edidit in ejus academiciæ commentariis, ac Maraldus sibi quoque, necnon viro summo Malezievio probari literis ad me suis significavit; neque ab ea Jacobum Cassinum abhorrire arbitror, cui obliquitatem illam superiore anno gr. 23. 28. 20 inventam Celsus Parisiis degens, ac cum eo observationibus vacans, nuper epistola sua me monuit.

Ut ergo appareat quid denique e solstitiis Bononiæ observatis efficiatur, declinationes eclipticæ, quæ e singulis proximorum duorum conjugationibus erutæ sunt, hic subjeci; atque una altitudines poli ex iisdem observationibus deductas, & mox usus futuras adscripsi.



<i>Solstitia observata</i>		<i>Obliq. eclipt.</i>			<i>Lat. ad D. Petr.</i>		
		G	I	II	G	I	II
Æstivum & hybernium	1656	23.	29.	2	44.	29.	22
Æstivum & hybernium	1658	23.	28.	54	44.	29.	18
Æstivum & hybernium	1663	23.	28.	44	44.	29.	16
Hybernium 1666 æstivum	1667	23.	28.	54	44.	29.	12
Æstivum & hybernium	1667	23.	28.	58	44.	29.	16
Hybernium 1667 æstivum	1668	23.	29.	2	44.	29.	12
Æstivum & hybernium	1668	23.	29.	0	44.	29.	10
Hybernium 1668 æstivum	1669	23.	28.	58	44.	29.	12
Æstivum & hybernium	1669	23.	28.	59	44.	29.	13
Hybernium 1669 æstivum	1670	23.	29.	2	44.	29.	11
Æstivum 1690 hybernium	1691	23.	28.	45	44.	29.	46
Æstivum & hybernium	1695	23.	28.	38	44.	29.	41
Æstivum & hybernium	1697	23.	28.	34	44.	29.	37
Hybernium 1697 æstivum	1698	23.	28.	32	44.	29.	39
Æstivum & hybernium	1698	23.	28.	32	44.	29.	39
Hybernium 1698 æstivum	1699	23.	28.	33	44.	29.	37
Æstivum & hybernium	1703	23.	28.	34	44.	29.	35
Hybernium 1703 æstivum	1704	23.	28.	35	44.	29.	33
Æstivum & hybernium	1705	23.	28.	38	44.	29.	36
Hybernium 1706 æstivum	1707	23.	28.	49	44.	29.	35
Æstivum & hybernium	1707	23.	28.	46	44.	29.	32
Hybernium 1709 æstivum	1710	23.	28.	45	44.	29.	21
Hybernium 1718 æstivum	1719	23.	28.	28	44.	29.	30
Æstivum & hybernium	1722	23.	28.	32	44.	29.	33
Hybernium 1722 æstivum	1723	23.	28.	32	44.	29.	34
Æstivum & hybernium	1725	23.	28.	46	44.	29.	31
Hybernium 1725 æstivum	1726	23.	28.	46	44.	29.	31
Æstivum & hybernium	1728	23.	28.	47	44.	29.	39
Hybernium 1728 æstivum	1729	23.	28.	47	44.	29.	39
Æstivum & hybernium	1731	23.	28.	28	44.	29.	32
Hybernium 1731 æstivum	1732	23.	28.	26	44.	29.	34
Æstivum & hybernium	1732	23.	28.	23	44.	29.	31
Hybernium 1732 æstivum	1733	23.	28.	24	44.	29.	30
Æstivum & hybernium	1733	23.	28.	26	44.	29.	32
Hybernium 1733 æstivum	1734	23.	28.	25	44.	29.	32
Æstivum & hybernium	1734	23.	28.	28	44.	29.	35

Post annum 1710 altitudines poli adauxi sec. 14 obli-
bramenti vitium,
anno 1722 depre-
henfum. vide sup.
cap. 11.

Mihi plane hanc seriem percurrenti neque uniformis anguli illius inminutio, neque tamen constans ex vacillatione restitutio apparet, ac si quid iudico, omnino res eo spectare videtur ut eclipticæ planum perpetua quadam oscillatione nutet, verum inter nutandum ad æquatoris planum (saltem ætate hac nostra) sensim accedat. Ubi enim annos baud multum inter se se diffitos con-

feras

feras obliquitas modo aucta modo imminuta videtur, interdum etiam nihil quicquam diversa deprehenditur; verum ubi majus intervallum accipitur decrementa manifesto prævalent. Ac ne cui fallaciæ sit quod obliquitatis mensurâ gr. 23. 28. 45 annis etiam haud parum distantibus sæpe recurrat, trium saltem aut 4 secundorum discrimine, veluti annis 1663, 1691, 1707, 1725, quæ propterea quasi vera ac perpetua spectari, aliisque reiectis una statui debeat, præsertim cum inter reliquas fere sit media, ne inquam ex eo decipiamur, perpendendum est mensuram hanc grad. 23. 28. 45 primis a gnomone constructo temporibus minimam fuisse, postremis vero hisce annis maximam reperiiri earum omnium quas eclipctica libratione illa attingat; ad annum enim 1670 nusquam angulum ad secunda 25 vel 30 supra gradus 23. 28 contractum videas, quo nunc pertingit; contra nusquam hoc tempore ad gradus 23. 29, ut tunc, ampliari animadvertas, ut plane aliqua ejus anguli extenuatio sit agnoscenda.

Id ipsum autem permultis aliorum observationibus confirmare possem, veluti Flaminii, Bianchini, Lavalii, necnon viri nobilissimi Paridis Marchionis Salvaghi, qui singuli hoc ineunte sæculo vel superiori exeunte in rem hanc inquitiverunt, quorum dimensiones etsi ad unguem non respondent, in id tamen conspirant ut nusquam obliquitatem eclipcticæ grad. 23. 29, sed perpetuo minorem efficiant, cum tamen Cassinus, Hevelius, Richerius, Hircæus qui temporibus paulo superioribus observabant, vel graduum ipsorum 23. 29 vel aliquanto majorem constituisent; verum hoc rotum a Louvillæo in illa dissertatione præstitum est. Tantum addam obliquitatis imminutionem vel sine calculorum subtilitate ex hoc gnomone in vulgus notam exploratamque esse, quod Solaris species ellipses illas duas, quæ ad eam per solstitia excipiantur e priorum annorum observationibus delineatæ fuerant, nusquam impleat sed aliquidi ejus ab iis ellipsis extrorsum versus æquinoctiorum loca perpetuo promineat.

An autem hæc imminutio jam inde a Pitheæ & Eratosthenis temporibus ducenda sit, quod Louvillæus arbitratur, an deinceps expectandum ut eodem tenore pergat, ac denique eclipctica in æquinoctialem circulum procumbat, neque definire ausim, neque mei est instituti. Certe quidquid ejus futurum est, si usquam alias, Bononiæ potissimum magni hujusce instrumenti subsidio explorari poterit.

CAPUT XVI.

De exiguis altitudinis poli varietatibus hoc gnomone compertis.

Vix est ut ab ea indagine quam hætenus sum profecutus indago alia segregari possit quæ ad poli altitudinem attinet, cujus varietates, quantum eas e solstitiis perscrutari licet, in synopsis nuper tradita manifestæ sunt. Hæ autem diversitates vel ex eo facile arguuntur, quod dum eclipcticæ inclinatio idem-

identidem mutatur, minime æqualis utriusque tropici ad æquatorem accessus, vel ab eo recessus observetur, sed alteri eorum major, alteri minor, aut nullus, quinimmo interdum in diversum mutatio accidat. Si enim quantum æstivus tropicus a vertice recessit tantumdem hybernus accessisset, aut illo se se attollente hic pari spatio depressus foret, nihil quicquam varia prodiret æquatoris distantia a vertice, quæ altitudini poli perpetuo æqualis est, nunc vero secus contingere et distantiarum tropicarum serie supra posita liquet, si ejus numeri diligenter inter se se conferantur. Nam ut unum in plurimis exemplum afferam, apparet distantiam a vertice tropici Cancræ, quæ anno 1658 fuerat gr. 21. 0. 24, anno 1697 fuisse gr. 21. 1. 3 ac propterea augmentum eo tempore suscepisse secundorum 39; cum tamen distantia tropici Capricorni, quæ anno 1658 inventa fuerat gr. 67. 58. 12, nullo vel infensibili decremento comperta sit anno 1697 grad. 67. 58. 11; contra ex anno 1697 ad 1709 vel 1710 distantia a vertice tropici Cancræ contracta est secundis 27, Capricorni vero adeo non tantumdem est adaucta, ut etiam secundis 6 imminuta fuerit. Ex hoc ergo necessarium consequitur æquinoctialis circuli, quippe medio inter tropicos loco constituti, positum identidem alium reperiri.

Ne autem iterum in observationum incertitudinem hæc dissidia rejiciamus perpendendum est ea quidem exigua censerî posse si ad ea referantur quæ in altitudine poli minoribus instrumentis investiganda consurgere solent, fecus si ea subtilitas spectetur quam maximus hic gnomon præstare potest. Minima enim latitudo omnium quæ inventæ fuerint, ea nempe quæ prodit anno 1670 gr. 44. 29. 11, secundis 35 differt a maxima quæ in annum 1691 convenit gr. 44. 29. 46, majori sane discrimine quam ut sedulum hoc instrumentum observationem fallat, præsertim cum singulis fere annis tropicæ hæc distantie et plurium dierum observationibus mediæ electæ fuerint, ac præterea errores si qui sunt, cum rationes subducuntur nonnisi dimidii superesse possint, quod ad latitudinem constandam dimidium tantum tropicorum interapedinis in summam impetetur, ut taceam latitudinum quæ ad singulos annos deductæ sunt (præsertim ex anno 1656 ad 1670) decrementa ordinem quemdam servare, iterumque ex anno 1691 ad 1710 haud dissimili lege progredi, quæ sane nihil vagum ac fortuitum quod in observando contingat, sed certum quiddam ac constans præferre videntur, quod si in verticalis puncti positu, si in ipsiis polis ac mundi axe agnoscendum sit.

Sed quando prioribus illis annis latitudo et solstitiis eruta eadem e stella polari summo consensu eliciebatur, tentandum existimavi an ejus mutationes, quas solstitiales altitudines perderent, stellarum quocque testimonio confirmarentur. Equidem ut in ipsiis Divi Petronii ædibus id experiri liceat peculiare instrumentum Cassini ac Gulselmæni cura constructum fuerat anno 1695, ac deinceps in hocce usus servatum, cujus instrumenti descriptio una cum gnomonis historia eodem anno est edita, ac sane ejus ope stellarum altitudines eadem subtilitate definire licet qua Solis positum ex hac linea arguimus, verum usus nonnihil est operosus. Stella enim meridianum pertransiens per pinnulam aut telescopium machinæ aptatum inde spectanda est unde regularum duarum in sublimi positarum, quarum altera verticalis est, horizontalis altera, angulum distin-

diffringere videatur, quod cum noctu peragendum sit necesse est ut angulus ille lumine satis vivido collustretur, id quod nonnisi tabulatis substructis, scilicque prælongis admotis assequi licet, quod borealis ædium fenestra, cui regulæ illæ sunt appositæ, pedes amplius 75 a pavimento attollatur. Ut hoc incommodi evitare meos anni dies captabam quibus stella polaris in ipsa crepusculi luce ad meridianum appelleret, verum cum fieri nequeat ut eadem anni tempestate uterque ejus transitus in crepusculum incidat, observatio de altera duarum altitudinum meridianarum peracta cum ea componenda erat quæ alia tempestate de altera haberetur, id quod propter stellæ evagationes fallax esse poterat; itaque cum in eo mihi non satisfacerem indaginem hanc dimisi, & alibi tentandum duxi.

Anno igitur 1703 mense Decembri in observatorio domestico Aloysii Ferdinandi Comitiss Marillii, viri de optimis disciplinis præclare meriti, altitudinem poli ejus loci ita cum Stancario definiti quadrante cujus radius pedum Bononienſium trium:

Distantia a vertice stellæ polaris in parte superiori meridiani
plurium dierum observationibus inventa Gr. 43. 12. 42

Distantia ejusdem in parte inferiori meridiani per easdem
noctes bis observata Gr. 47. 46. 26

Differentia Gr. 4. 33. 44

Differentiæ dimidium seu distantia stellæ a polo boreo Gr. 2. 16. 52

Ergo apparens distantia poli a vertice Gr. 45. 29. 34
Refractio Cassiniana addenda 1. 0

Distantia vera poli a vertice Gr. 45. 30. 34

Et vera poli altitudo in observatorio Marſiliano Gr. 44. 29. 20

Observatorium hoc ex mensuris geodeticis hoc anno 1735 accurate actis australius est æde Divi Petronii in ipso perpendiculari puncto decempedis Bononienſibus 63 nempe secundis circuli maxime fere

8

Ergo vera altitudo poli ad D. Petronii anno 1703 Gr. 44. 29. 34

quæ ex observationibus solstitialibus ejusdem anni cruta fuerat Gr. 44. 29. 35

Idem investigavimus anno 1706 mensibus Octobri ac Novembri per stellam alia circumpolarem, eamque insignem Ursæ majoris in humero, quæ Bayero notatur; utebatur autem semicirculo murali cujus radius pedum Bononienſium 4.

Altitudo apparens stellæ in parte superiori experimentis tribus inventa

Gr. 71. 10. 49
20

Refractio subtrahenda ex Cassini tabula

Alti-

Altitudo superior vera

gr. 71. 10. 29

In parte vero inferiori altitudo apparens ex observationibus
quatuor

gr. 17. 51. 34

Refractio Cassiniana subtrahenda

gr. 3. 2

Altitudo inferior vera

gr. 17. 48. 32

Altitudinum verarum differentia

gr. 53. 21. 57

Semidifferentia

gr. 26. 40. 58

Elevatio vera poli in observatorio Marfiliano

gr. 44. 29. 30

Differentia parallelorum ut supra addenda

8

Ergo elevatio poli in Divi Petronii anno 1706

gr. 44. 29. 38

Ex observationibus solstitialibus inventa ibi fuerat anno 1705

gr. 44. 29. 36

Anno autem 1707

gr. 44. 29. 35

Præterea eodem anno 1706 quamplurimas stellarum altarum circumpolarium observationes eodem instrumento murali peregrimus mensibus Octobri, Novembri, ac Decembri, e quibus singulis altitudinem poli in observatorio Marfiliano eruimus non majorem grad. 44. 29. 56, nec minorem gr. 44. 29. 8, mediam vero inter omnes definivimus grad. 44. 29. 35, atque in eam altitudinis mensuram e duabus supra viginti stellis quatuordecim ita conspirant, ut ab ea nonnullæ per defectum, aliæ per excessum plus secundis 10 non dissideant, cui quidem mediæ mensuræ respondent ad Divi Petronii gr. 44. 29. 43; unde illud saltem manifesto evincitur earum ædium latitudinem anno 1706 majorem fuisse quam Cassinus ac Ricciolius tam miro consensu anno 1656 invenerant, ac solstitiales ejusdem anni altitudines confirmaverant, grad. nempe 44. 29. 22. Quod autem instrumento eodem murali polaris stella reliquis non responderit (quippe quæ latitudinem exhibuit in observatorio gr. 44. 30. 13) id scilicet in causa fuisse arbitror quod instrumenti planum meridiani plano exacte non congrueret, ac præterea filum, quod in foco telescopii horizontis plano æquidistans statui debet, cum positum exquisitè non servaret; quæ duo, ubi immotis instrumentis utimur, nisi maxima cura prospecta sint, dissidia haud spernenda in iis stellis efficere possunt, quæ circuitus angustiores circa polum describunt.

Denique anno 1728 eandem indaginem aggressi sumus in publico observatorio Bononiensis scientiarum instituti; urbamur autem & semicirculo & quadrante eodem quo anno 1703, ac alio præterea quadrante tripedali, quem maximus optimorum studiorum & patronus & cultor Alexander Cardinalis Albanus observatorio dono dederat, quæ instrumenta singula ex recenti summo studio a nobis seorsim expensa, ac ad rectam constitutionem redacta fuerant. Cum autem omnia una tractanda essent, officia necum partiebantur Franciscus Zanottus, Jo: Jacobus Parma, Joseph Boliuss Marchesius, Franciscus

ciscus Vandellius, Franciscus Algarottus, Eustachius Zanottus. De altitudinibus tamen semicirculo murali captatis nihil exacti spondere ausim pluribus de causis, sed computi summa eodem cum aliis instrumentis recidit.

	<i>Quadrante Albaniano</i>			<i>Quadrante Marfiliano</i>			<i>Semicirculo murali</i>		
	G	I	II	G	I	II	G	I	II
Altit. max. stellæ Pol. Nov. & Dec. 1728 pluries	46.39.10			46.39.12			46.39.35		
Ejusdem altitudo minima Decembri	42.22.35			42.22.30			42.22.10		
Differentia altitudinum	4.16.35			4.16.42			4.17.25		
Semidifferentia seu dist. stellæ a polo boreo	2. 8.17			2. 8.21			2. 8.42		
Unde altitud. poli apparens in observ. publico	44.30.52			44.30.51			44.30.52		
Refractio Cassiniana subtrahenda	1. 0			1. 0			1. 0		
Vera altitudo in observatorio publico	44.29.52			44.29.51			44.29.52		
Ex mensuris geodeticis anno 1735 peractis									
locus perpendiculi in D. Petronii australior est observatorio		14			14			14	
Ergo vera altit. poli ad D. Petronii anno 1728	44.29.38			44.29.37			44.29.38		
Ex observationibus solstitorum ejusdem anni									
1728 arguitur latitudo ad D. Petronii	44.29.39			44.29.39			44.29.39		

Hæ igitur observationes, juxta atque aliæ superius allatæ easdem fere poli altitudines restituunt quæ per eadem tempora e solstitiis eruntur, earumque rectitudinem confirmant; ac illud præterea ostendunt correctionem a vitiato lineæ libramento in locis saltem solstitorum haud male respondere, tametsi vitia illa in regula tantum ferrea explorata fuerant, & ab eo experimento anni jam plures abierunt. Quæ cum ita sint, statui posse videtur latitudinem minime constantem esse, sed incrementa aut decrementsa ut ut exigua interdum, suscipere; id enim ut vel invitum agnoscerem tot ac tam diversarum observationum consensus a me extorsit: nescio an & alijs persuadebit.

Quo autem minus inopinatum id accadat faciunt plurium superioris ævi astronomorum testimonia, necnon Cassini ipsius judicium, cujus dissertatio- nem de eo argumento anno 1693 editam superiori capite memoravimus. Is enim post plurimas, cum suas tum aliorum observationes de stella polari relatas, atque expensas ostendit latitudinis diversitatem eodem in loco interdum, ad minuta duo exurgere; neve hoc distantie stellæ a polo tribui possit, quæ distantia ob stellæ aberrationes adhuc incompertas, perperam assumpta fuerit, in singulis observationibus illis quas affert utraque stellæ altitudo meridia- na notata fuerat atque exinde latitudo elicitæ. Itaque Bononiensem lati- tudinem nonnihil mutatam adeo non mirari debemus, ut imo liberaliter nobiscum actum existimandum sit, quod variatio longe infra minuta illa duo ha-

Atenus confiterit, quippe quæ tertiam præterpropter minuti partem non excesserit, si medias singulorum temporum mensuras spectemus, id quod fortasse instrumenti hujusce magnitudini ac observationum subtilitati tribui potest.

Non est mihi reticendum quod Jacobus Cassinus in itinere Italico retulit, ac Cassinus quoque Pater in descriptione meridiane hujus lineæ indicaverat: Bononiæ latitudinem anno 1694 die 30 Decembris ex stella polari ostente astronomico a se definitam grad. 44. 30. 17, iterumque die 1. Novembris 1695 gr. 44. 30. 39, ac denique die 7 Novembris eo instrumento cujus supra meminimus inventam cum Gulielmino ad Divi Petronii gr. 44. 30. 21, cui determinationi utpote fere mediæ adhærendum arbitratur; et si autem hæc latitudo secundis 40 eam excedit quam anno eodem 1695 e solstitiis erutam in synopsi tradidimus gr. 44. 29. 41, tamen confirmari saltem ex eo videtur majorem, tunc fuisse quam anno 1656, quo graduum 44. 29. 22 taxata fuerat. Ceterum cum in illis observationibus altitudo stellæ in parte tantum superiori explorata fuerit, ac modo ex comparatione cum ea quæ in Parisiensis observatorio notabatur, modo ex assumpta stellæ a polo distantia latitudines sunt elicite, res ex hisce observationibus subtilissime constituta non videtur.

Qua porro ratione enarratæ hætenus diversitates explicari queant, an scilicet verticalis potius lineæ detorsioni ex telluris figura fortasse mutabili ortæ, quam terrestris axis trepidationi, aut turbinationi tribuendæ sint (id quod ad aliqua meridianorum terrestrium luxatione disjunctum esse non posset) aliis perpendendum relinquo. Quousque enim plurimæ observationes & hic, & alibi actæ certas harum vicissitudinum, si modo ullæ sunt, mensuras, ac leges non prodant, nil nisi signum, ac divinationes asserre licet.

CAPUT XVII.

De tabulis Solaribus harum observationum ope primum accurate confectis.

Nequè locum Solis in meridiano sine refractionum ac parallaxeon notitia inveniri, neque ex eo invento sine poli altitudine atque eclipticæ obliquitate positum in Zodiaco investigari posse supra diximus. Sunt ergo hæc quatuor supputationum omnium quæ ad solem, atque adeo ad planetas ceterasque stellas spectant, fundamenta, ac astronomici computi quasi elementa, quædam, quæ sane quam accurate ex hoc gnomone constituta fuerint hætenus declaravius. Verum ad ipsam Solis motum penitus intelligendum ac certis numeris adstringendum non sat est plurimas ejus in ecliptica positiones invenisse. Arte præterea ac solertia opus est quo motus ille, quem inæqualem esse statim apparet ex æqualitate quæpiam derivari, ejusque celeritatum leges, mensuræ, termini prægnari queant.

Veteres astronomi cum persuasione quadam ducti nullum in cælis motum nisi circularem & æquabilem agnoscerent eam omnem inæqualitatem quæ in Sole obser-

observatur opticam arbitrabantur, ac ex eo profectam quod tellus ab ejus circuli centro nonnihil abesset, quem circulum Sol æquabili motu describeret; ex ea enim hypotesi fiebat ut circuli illius partes tametsi æquales nihilominus visui nostro inæqualiter objectæ angulis minime paribus aspicerentur, quibus angulis stellarum motus metimur. Hanc quidem causam, observationibus non valde accuratis decepti, Solaribus anomalis explicandis satis aptam rebantur, verum ubi ad planetas alios ventum erat, cum eam non æque satisfacere perspexissent aliud præterea centrum comminiscabantur, ad quod si planetæ motus referretur æquabilis esset, tamen si planeta in circulo suo inæqualiter procederet; itaque hypotesim illam æqualitatis verbo tenus servabant, re autem ipsa tollendam agnoscebant, cum opticæ inæqualitati physicam adjungi opus esset quo planetarum motus explicarentur.

Keplerus circulem figuram, quo phænomena salva essent, antiquandam, ac ellipsem subrogandam, æqualitatem vero minime in arcibus aut angulis sed in arcibus spectandam opinatus est, atque id de stella Martis ac de errantibus plerisque aliis, astronomis pene omnibus persuasit; de Sole autem res adhuc agitabatur cum Cassinus gnomone hoc constructo controversiæ dirimendæ facultatem sibi oblatam existimavit. Si enim nulla nisi apparens inæqualitas Soli obtingeret necesse erat celeritatem ejus augeri pro eo fere ac distantia minueretur; cum ergo & apparens magnitudo eadem proportionis distantii respondere debeat, consequens erat ut celeritatum ratio diametrorum apparentium rationem sequeretur; quod an ita esset hoc instrumento certissime exploratum. Iri censuit, quo & diametri Solis quotidie mensuris comprehendi possent, & celeritates e duorum, aut plurium contigentium dierum longitudinibus argui. Itaque cum multa ejusmodi experimenta cæpisset, non modo assumptionis illius falsitatem agnovit sed celeritatum rationem diametrorum duplicatam, esse comperit, quod in Keplerianam arearum æqualitatem mirifice quadrabat. Mirum est autem hanc celeritatum legem ac proportionem, quæ aliis subinde astronomis eadem inventa est, accurate adeo perspicui illi potuisse et solaribus diametris, cum diametri ipsæ, quippe ex hoc instrumento definitæ, minime accuratæ essent, quemadmodum capite 4 declaravimus; sed fors tulit ut in iis quibus usus est observationibus diametri quamquam veris minores veram tamen harum rationem servarent. Quanti autem momenti res hæc ad astronomiam esset vel ex eo intelligere licet quod distantia centri Solaris orbitæ a tellure duplo inde minor prodiret quam ubi inæqualitas omnis tantummodo apparens esset, ac propterea distantia Solis appogæa supra perigæam semisse tantum ejus differentię augeretur qua in illa hypotesi augenda fuerat, unde & aliarum omnium distantiarum extra apsidem mira varietas consurgeret, qua ignorata ne aliorum quidem planetarum ad tellurem positus cognoscere poterant.

Hicce ergo fundamentis Cassinus anno 1666 solares tabulas suas superstruxit, prioribus tabulis antiquatis quas ante refractiones inventas adornaverat. In iis construendis ellipricam Solaris orbitæ figuram cum Keplero retinuit; sed cum in hypotesi ipsa Kepleriana de arearum æqualitate valde operosa esset Solaris anomalix per annum distributio, ac multo etiam difficilior apogei inven-

ventio, ac speciei ellipseos determinatio, compertum autem esset si pro areis anguli in alio ellipseos umbilico (quorum umbilicorum alterum Terra occupat) temporis proportionales ponerentur, futurum ut pene eadem toto anno Solis longitudo prodiret, in hanc hypotesin est delapsus, cui & Sethus Vuardus in Anglia, & Comes Paganus in Gallia adhæserunt, atque in ea hypotesi problema illud difficillimum de ellipseos specie ejusque axis positione et tribus aut pluribus observationibus determinanda primus elegantissime solvit, cujus solutionis demonstratio a Jacobo filio edita nuper est in commentariis academici Parisiensis anni 1723.

Has itaque omnium primas toto anno Soli respondentes tabulas astronomia habuit; neque enim aut Philolaici Bullialdi, aut Bononienses Ricciolli, aut Rudolphinæ ipsæ Kepleri, quamquam eidem aut parum diversæ hypotesi aptatæ essent (quod antea fuerant nullæ) sat exquisitè præstare id poterant, quippe quæ ex observationibus minime a refractionum fallacia castigatis, atque adeo falsis concinnatæ fuerant. Eas tamen tabulas Cassinus nusquam edidit, sed Malvasiæ, Montanario, Grassino, Fabrijo, Mezzavaccæ aliisque nonnullis tradidit, indeque ephemerides Solis ex anno 1661 supputari cæptæ. Tanta autem erat earum ephemeridum cum cælo consensus, ut quoties puncta duo in hac meridiana linea notarentur, quæ puncta ab utroque speciei margine attingenda ephemerides indicarent, nusquam prædictio falleret. Id uti sæpius fieret Cassinus Montanarium rogaverat per eam epistolam quæ ephemeridi Montanarii anni 1666 est adjecta, quo videlicet eorum sermones obrunderet qui & novas refractiones ab ipso invecstas cavillabantur, & tabulas alias præ Cassinianis extollebant; ac sane id sæpius factum, præsertim anno 1669, ac experimenta a Cassini tabulis stetit Fabrij autographa testantur.

Eundem eventum observationes aliæ fortitæ sunt quas annis 1672, & 1673 in insula Cayenna peregit Richetius; cum enim ejus insulæ meridianum a Bononiensi horis 4. 21 in occasum abire compertum esset, Sol autem intervallo annorum Julianorum novem horis ipsis 4. 21 serius ad idem Zodiaci punctum revertatur, fiebat ut annis illis duobus quoties Sol ad insulæ meridianum appelleret eandem adamusum longitudinem haberet quam ante annos novem, annis scilicet 1653 & 1664 iisdem diebus in meridio Bononiæ habuerat, quibus annis extabant Cassinianæ ephemerides Bononiensi meridio a Malvasia aptatæ. Earum ergo Ephemeridum numeros Richerianæ observationes a refractionibus exsolutæ plerumque tam exquisitè repræsentabant, quam optari posset; ac si interdum plusculum ab iis desciscerent, observationum ipsarum ordo vitio habitas palam faciebat.

Ceterum cum e paucorum annorum observationibus neque medius Solis motus, neque apogæi progressus satis exploratus esse posset, ac præterea, perdifficile esset in taxanda maxima Solis inæqualitate ne solido quidem minuto decipi (quod errorculi in distantis a vertice inter observandum admissi ut minimum triplo fere in longitudinibus excrescant) Cassinus nonnulla postmodum in tabulis illis expolienda agnovit, quod ejus ad me literæ die 13 Septembris 1699 Lutetia datæ testantur, motum enim medium Solis quarto quo-

vis anno secundis tribus a se adauctum, ejusque inæqualitatem minuti semisse succifani memorant. Has ego tabulas post supremam illis manum impostam anno 1711 per Maraldum accepi, deinde vero a Fevillæo secundo volumine itinerum anno 1714 editas vidi. In iis semidiametri Solis quæ cuilibet anomalie gradui respondent, ellipticæ orbis figuræ aptatæ sunt, quod secus erat in alia semidiametrorum Solarium tabula quam Cassinus ipse ad denos anni dies ex observationibus telescopia habitis concinnaverat, ac in elementis astronomiæ ediderat. Ex his porro tabulis depromptæ hæctenus sunt ephemerides illæ quas in usum Bononiensis observatorii ab anno 1715 inchoatas in annum 1725 perduxì, alii vero mecum ad 1750 protulerunt. Denique hoc ipso anno 1735 qui annus dum hæc conscriberem obrepfit, egregius juvenis Jo: Dominicus Maraldus, Jacobo Philippo patruo in regia academia Parisiensis suffectus ex iisdem tabulis ephemeridem illam edere cepit quæ *notitia temporum* inscribitur, ac quotannis ejusdem academici mandato vulgarur.

Neque tamen interea in pervestigando Solis motu exteriorum cessavit industria. Anno etenim 1661 prodierunt Thomæ Streetii Angli astronomici tabulæ (Carolinas appellavit) quas iterum anno 1705 una cum calculorum præceptis latine redditis Norimbergæ edidit Joannes Gabriel Doppelmayerus, vir de hisce studiis præclare meritus. Flamsteedius etiam in ea quæ Horocclii operibus inserta est dissertatione de dierum inæqualitate canones solares suos anno 1672 divulgavit; Philippus vero Hiræus anno 1686 Solares & ipse cum Lunaribus protulit, quibus reliquorum deinde planetarum tabulas, multorum annorum observationibus elaboratas adjunxit, ac problematis pluribus qua supputandi qua observandi artem mire pericientibus exornavit. Adhæc anno 1690 ab accuratissimo cæli observatore Joanne Hevelio Consule Gedanensi emissus est astronomiæ prodromus, in quo Solis cursum numeris & ipse subjecit. Teruntur præterea calculorum manibus insignis apud Anglos mathematici Gulielmi Viſthoni tabulæ in publicum editæ anno 1707, quarum numeros ad Solem spectantes & Streetianis ac Flamsteedianis a se correctis deductos restatur. Sed & vir nobilissimus Joannes Philippus Vurzelbau Norimbergæ, in civitate hisce studiis celeberrima solares suos canones protulit anno 1719, quos Noricos inde appellavit. Summi vero philosophi atque astronomi Equitis Newtoni Solares rationes juxta cum Lunaribus dum a præstantissimo Halleyo tabulis digestas expectamus, fecit ut desiderium hoc æquius ferre liceat eximius & ipse astronomus Nicasius Grammaticus Soc. Jesu, ex quo planetam utrumque ad Newtoni mentem paucis pagellis, Ingolstadii anno 1726 editis, comprehendit. Denique Louvillæus novos solares numeros a se se concinnatos Parisiensis academici commentariis inseruit anno 1720.

Quænam autem et tot astronomorum tabulis exquisitis cælo respondeant judicare neque mei est instituti, & immensæ foret operæ, præsertim cum propter multa quæ ad earum constructionem assumenda sunt elementa fere contingat ut & aliis annis, & aliis ejusdem anni diebus aliæ aliis præstare videantur, ac plerumque adeo modica sint quarundam inter se se dissidia (quod in Cassinianis præsertim, Hiræanis, ac Newtonianis accidere animadverti) ut observationum, vel maximo hocce instrumento habitatum, subtilitatem eludant.

Adhæc

Adhæc quo de singularum fide iudicium ferre liceret, observationes ipsæ a refractionibus ad singulorum auctorum præscriptum purgandæ forent, & eclipcticæ obliquitas, necnon loci latitudo ex iisdem refractionibus constituenda, quod infinitum pene esset. Mihi quid meridiana hæc linea ad Solarem motum longe accuratius quam a veteribus factum erat explorandum, ac numeris comprehendendum, ipsamque adeo astronomiam restituendam contulerit, sat est hæcenus declarasse. Quid autem ad summam in ea re subtilitatem attingendam conferre adhuc possit proximo capite aggrediar.

CAPUT XVIII.

*De æquinoctiis definiendis, deque anni tropici
quantitate constituenda.*

HAud satis officio se fecisse astronomi arbitrantur ubi numeris suis planetæ cuiuspiam motum accurate representaverint, nisi & perpetuo representent, aut certe, quando hominibus perpetuitatem spectare ambitiosum ac pene improbum videri potest, eorum numerorum usum ad longissima saltem ante ac post tempora non proferant. Id autem assequi non unius hominis opus est si a propriis tantum experimentis instructus rem sibi consiciendam sumat. Fac enim planetariæ orbitæ figuram ejusque positum annorum aliquot observationibus exquisitè constitutum; fac in ea orbita motus legem, omnemque inæqualitatum vicissitudinem certissime exploratam; fac demum neque orbitæ dimensiones, neque ejus centri ad tellurem positum usquam deinceps immutandum; tamen cum fieri nequeat ut tempus illud quo planeta conversionem suam absolvit paucis illis annis ad minima usque & insensilia scrupula taxatum fuerit, ac multo minus ut lineæ apsidum motus, quem aliquem esse constat, accuratissime sit compertus, necesse est ut errores qui initio sensum omnem, effugerant multorum denique annorum lapsu coacervati se se prodant, ac tabulæ paulatim a cælo desciscant. Itaque astronomorum omnium sententia duo hæc, nimirum planetæ periodus, quam periodum quum de Sole questio est annum vertentem, seu tropicum appellamus, & apogæi motus non aliunde quam ab observationibus hominum memoriam transcendentes repetenda earumque cum recentioribus collatione investiganda sunt. Etsi autem quo longius experimenta ducuntur eo ad hanc indaginem aptiora existantur, tamen ea fuit veterum in observationibus peragendis indiligentia, contra earum quæ hoc instrumento habentur tanta est subtilitas, ut parum absit quin horum octoginta annorum spatio paria cum illis præstare possint, quæ inde a primis astronomiæ temporibus ad nos manarunt.

Solent autem astronomi anni tropici quantitatem per æquinoctiorum præsertim observationes exquirere, tum quod ad hoc nihil necesse sit eclipcticæ obliquitatem, sed tantum loci latitudinem prænosci, tum quod per æquinoctii tempus diurna Solaris declinationis variatio valde manifesta sit, quippe quæ ad minu-

minuta fere 24 exsurgat, ac propterea exigui inter observandum errores eam indaginem haud valde turbare possint. Accedit quod æquinoctia ætate nostra prope medias a linea ælidum elongationes incidunt, ubi cum æquatio Solis ex apogæi motu plurimis annis perparum mutetur, sit ut linea veri motus pari fere tempore ac linea motus mediæ conversionem suam absolvat, ac annus tropicus verus anno tropico medio (cujus præsertim quantitas investiganda est) fere ad unguem exæquetur.

Æquinoctiorum porro tempora qua ratione ex observationibus eruantur vulgo est notissimum. In singula enim minuta declinationis meridie inventæ, quum Sol unum vel alterum circiter diem ab æquinoctio distat, hora una tribuitur, in singula vero secunda minutum unum, atque ita tempus conflatur quo æquinoctium ante vel post meridiem illum commissum est. Accuratus tamen tempus elicitur si ubi de verno æquinoctio agatur minutis 23.41, aut ubi de autumnali minutis 23.28 horæ 24 tribuantur, atque ex ea proportionem compurus ineatur, tantum enim ævo nostro declinationes prope æquinoctiorum articulos diutius variari multorum annorum experimenta evincunt.

Hoc igitur pacto æquinoctia cum verna tum autumnalia omnia, quotquot ex hisce Bononiensibus observationibus a gnomone constructo in hunc diem deduci poterant, computavi, eorumque seriem hic subjeci; qua in re eas ut plurimum observationes selegi quarum tempora quamminimè ab æquinoctio distabant, nihil moratus si aliorum dierum proximorum numeri æquinoctii momentum nonnihil diversum exhiberent. Advertendum est autem me in singulis æquinoctiis indagandis eas assumpsisse poli altitudines quæ ab ejusdem vel a proximorum annorum observationibus solstitialibus eruebantur, quas altitudines ante tradidi capite 15; nisi quod post annum 1700 cum parum quiddam discriminis in eo esset, piguit me singulis annis altitudinem aliam ponere, ac satius duxi mediam eligere gr. 44.29.35.

Ad hæc cum instrumenti examen anno 1722 habitum distantias omnes a vertice circa æquinoctia (nempe in locis centesimalium 97 & 99 perpendiculi) secundis præterpropter 15 ob vitiatum lineæ libramentum augendas ostenderet, nec vero liqueret quo tempore id vitii instrumento accidisset, ac mihi verosimile fieret non id repente sed paulatim obrepisse, correctionem nonnisi post annum 1715 adhibendam sum arbitratus, eandemque ad postremos hosce annos retinui, quod ejus vel omittendæ, vel immutandæ nulla esset causa.

Ubicumque autem duo aut plura sibi proxime succedentia æquinoctia occurrerent, temporis intervallum quod inter ea intercederet adscripsi. Sunt autem tempora hæc omnia apparentia, seu vera, quæ facile in media converti possunt.

*Altit. poli in fuga-
lis aequinoctiis ad
calculos assumpta*

*Aequinoctiorum
tempora*

*Aequinoctiora
proximorum
intervalla.*

G	I	II	H	I	D	H	I
44	20	22	1655	22 Sept.	17	11	
			1656	19 Mar.	11	32	178 18 20
			1656	21 Sept.	23	13	186 11 42
44	20	20	1657	19 Mar.	26	44	178 17 31
44	20	18	1658	19 Mar.	13	44	
44	20	14	1666	19 Mar.	21	16	
			1666	22 Sept.	10	10	186 12 14
44	20	12	1668	21 Sept.	21	32	
			1669	19 Mar.	14	39	178 17 7
44	20	11	1670	19 Mar.	20	50	
			1670	22 Sept.	8	51	186 12 1
44	20	11	1672	19 Mar.	8	11	
			1672	21 Sept.	20	29	186 22 18
44	20	11	1674	19 Mar.	19	35	
44	20	11	1676	19 Mar.	7	15	
44	20	11	1679	20 Mar.	1	15	
44	20	46	1690	22 Sept.	4	44	
44	20	41	1695	19 Mar.	21	58	
			1695	22 Sept.	9	55	186 11 57
44	20	40	1696	19 Mar.	3	43	178 17 48
			1696	21 Sept.	15	14	186 12 11
44	20	39	1697	21 Sept.	21	41	
44	20	30	1698	19 Mar.	15	18	178 17 37
			1698	22 Sept.	3	42	186 12 24
44	20	37	1699	19 Mar.	21	5	178 17 13
			1699	22 Sept.	9	46	186 12 11
44	20	35	1700	20 Mar.	5	12	178 17 46
			1700	22 Sept.	25	13	186 12 1
			1701	20 Mar.	8	35	178 17 22
			1701	22 Sept.	21	10	186 12 35
			1702	20 Mar.	14	48	178 17 38
			1702	21 Sept.	2	43	186 12 55
			1703	20 Mar.	20	32	178 17 40
			1703	23 Sept.	8	30	186 12 58
			1704	20 Mar.	2	24	178 17 54
			1704	22 Sept.	14	48	186 12 24
			1705	22 Sept.	20	32	
			1706	20 Mar.	23	47	178 17 35
			1706	23 Sept.	2	15	186 12 28
			1707	23 Sept.	7	50	
			1708	22 Sept.	13	44	
			1710	20 Mar.	13	0	
			1711	23 Sept.	7	14	
			1712	20 Mar.	0	13	178 17 9
			1714	23 Sept.	0	37	
			1715	23 Sept.	6	33	

*Principi observationibus correctionem
ante memoratam adhibuit, altitudinem
autem poli retinuit gr. 44. 19. 35*

	H	I	D	H	I
1719	23 Sept.	5	47		
1722	22 Sept.	17	17	178	17 47
1722	20 Mar.	11	4	186	12 8
1722	22 Sept.	23	12	178	17 41
1723	20 Mar.	26	53	186	12 3
1723	23 Sept.	4	56	178	17 43
1724	19 Mar.	22	38	186	12 0
1724	22 Sept.	20	38	178	17 38
1725	20 Mar.	4	16		
1726	20 Mar.	10	9	186	12 13
1726	22 Sept.	22	22	178	17 43
1727	20 Mar.	16	5	186	12 2
1727	23 Sept.	4	7	178	17 32
1728	19 Mar.	21	39	186	12 54
1728	22 Sept.	9	33		
1730	22 Sept.	21	25	178	17 47
1731	20 Mar.	15	12	186	12 11
1731	23 Sept.	3	23	178	17 46
1732	19 Mar.	21	9	186	12 4
1732	22 Sept.	9	13		
1733	22 Sept.	15	5	178	17 40
1734	20 Mar.	8	54	186	12 4
1734	22 Sept.	20	58		

Qui diligenter hanc seriem perpenderit haud difficulter certiores observationes a minus certis distinguet, nec sine earum delectu investigationem anni tropici aggredietur; cui rei adscripta æquinoctiorum intervalla usui in primis esse possunt. Ubi enim æquinoctia tria continentia, ac propterea intervalla duo notata sunt, si intervallorum summa ab anni tropici quantitate utcumque nota dierum præterpropter 365 horarum 5. 49 plusculis minutis dissideat, in aliquo eorum æquinoctiorum vitium prodit, in eo præsertim cujus a proximo intervallum magis ab ea temporis mensura dissidet, quam mensuram frequentius in serie recurrere apparet, id quod etiam fallaciam indicare potest ubi duo tantum æquinoctia sibi succedant, & unicum intervallum occurrat. Intervallum enim tam ab autumnali æquinoctio ad vernum dierum 178 & horarum amplius 17, quam a verno ad autumnale dierum 186, horarum fere 12 toto horum octoginta annorum decursu satis sibi constare debet, nisi quod illud ex anno 1656 ad 1732 tertiam circiter vel quartam horæ partem adauctum, hoc vero tantumdem contractum astronomicæ rationes postulant. Sed & in iis æquinoctiis quæ in hac serie solitaria sunt errores deprehendere licet si cum aliis cognominibus æquinoctiis uno aut pluribus quadriennlis inde diffitis conferantur, quod æquinoctia in anno Juliano quadriennio quolibet minutis 43 aut 44 antevertere satis sit exploratum. Mihi quidem quæ primis annis a gnomonis constitutione observata fuerant non tam exquisitè sibi respondere videntur, quam quæ statim a restauratione definita sunt, nescio an ex illa polorum inconstantia quæ major illo tempore quam hoc est inventa; neque tamen melius inter se se consentiebant ubi altitudinem poli perpetuo eandem assumerem. Præclare tamen definitum videtur autumnale æquinoctium anni 1672 die 21 Septembris hora 20. 29, quod Richerio observante in Cayenna commissum est hora 16. 10, nempe Bononiæ hora 20. 31. Sed & intervallum inter utrumque ejus anni æquinoctium ex Bononiensibus observationibus, dierum scilicet 186. 12. 18 in Richerianas observationes fere quadrat, e quibus intervallum illud esse oportuit dierum 186. 12. 21.

Postremis vero hisce annis quibus correctionem illam a depravato libramento observationibus adhibui, æquinoctiorum intervalla recte, atque ordine procedunt, quantum scilicet observandi difficultates permittunt, non enim in hoc observationum genere perpetuo expectandum ut tempora infra decimam, aut duodecimam horæ partem certissime determinentur.

Jam ergo ut experiamur quanti subrilliter ab hisce æquinoctiis anni quantitas constitui possit, duo seligenus eadem tempestate observata, ac maximo quam fieri possit periodorum quadriennalium numero inter se distantia, nempe autumnalia duo annorum 1656 & 1732, hæc enim & annis 76 (quæ Callipicæ est periodus) nempe quadriennlis 19 distant, & in primis satis accurate definita videntur, sive eorum a proximis intervalla spectemus, sive ipsa cum aliis cognominibus conferamus. Commissum est igitur autumnale æquinoctium anni 1656 die 21 Septembris Gregoriani, sive die 11 Juliani hora 23. 13, anni autem 1732 die 22 Septembris Gregoriani, hoc est Juliani rursus die 11 hora 9. 13; annis itaque 76 Julianis æquinoctii antecessio fuit horarum ipsarum 14, quæ in annos 76 tributa singulos annos tropicos a Julianis deficere ostendunt

min. 11. sec. 3, atque hæc scrupula ex anno Juliano dierum 365 hor. 6 subdu-
cta anni tropici longitudinem produnt dierum 365 hor. 5. 48. 57. Sed si pro
veris æquinoctiis mediorum rationem habeamus, præcessio illa horarum 14
contrahenda erit minutis præterpropter 9, quibus in annos singulos compe-
tunt secunda 7, ac tantumdem augendus annus modo inventus, ut fiat die-
rum 365 hor. 5. 49. 4.

Hic autem anni vertentis modus secundis haud amplius 8 ab eo discrepat
quem Cassinus in commentariis regiæ Parisiensis academix anni 1703 elicit,
dierum 365 hor. 5. 49. 12, collato scilicet ejus anni æquinoctio, quod ipse
Parisius notavit die 20 Martii hora 20, cum eo quod Hipparchus ante annos
1848 Alexandriæ definiverat. Idem anni 1703 æquinoctium hoc gnomone de-
terminavimus (uti in serie notatum est) hora 20. 32, quod Parisiensis observa-
tioni, si meridianorum differentia attendatur, ad unguem fere consentit,
annique mensuram ex Hipparchæo æquinoctio deductam ad sensum eandem
restituit. Apparet ergo, etsi nondum ulla ex hisce Bononiensibus observatio-
nibus annorum 80 ætatem excedit, haud multum abesse quominus paria cum
illis faciat quas a veteribus accepimus; neque dubitandum fore ut qui uno vel
altero ad summum ab hinc sæculo eidem indagini vacaverint, ad rem hanc
subtilissime explicandam antiquorum æquinoctia non valde requirant.

CAPUT XIX.

De solstitiis observandis atque anni tropici modo iterum exinde perinvestigando.

Anni vertentis mensuram non æquinoctiorum modo, sed & solstitiorum
ope investigari posse in spem nos adduxit recentiorum astronomorum
solertia, postquam solstitiorum ipsorum articulis sat accurate comprehendendis
rationes excogitatae sunt, quam rem minime in potestate esse veteres opina-
bantur. Ex omnibus autem methodis quæ ad solstitia inveniendâ circumfer-
runtur illa subtilitate præstare videtur quam Hircus indicaverat, ejusque
exempla in commentariis Parisiensis academix annorum 1714 & 1715 a viro
nobilissimo Malezievius allata extant; si nempe tempora duo observando in-
vestigantur, alterum ante solstitium, a solstitio alterum, quibus temporibus
centrum Solis in eodem circulo æquatori parallelo versetur. Ubi enim hæc
nora fuerint ad utrumque illud tempus æquatio Solis et tabulis astronomicis se-
lectioribus supputanda erit, indeque tempora alia duo eruenda, quibus linea
medii motus Solis easdem illas positiones duas affectata fuerit, quas linea mo-
tus veri in utraque observatione obtinuerat; ita fiet ut momentum quod hor-
um temporum intervallum bifariam dividit in ipsum solstitium medium iaci-
dat; quare cum ex iisdem tabulis mediæ verique solstitii intervallum ex æqua-
tione solstitiali notum esse possit, veri quoque solstitii momentum patebit.
Sed hoc ipsum Maraldi epilogismo expeditius obtinebitur, si utriusque æqua-
tionis

tionis, quæ observationum duarum temporibus competit semidifferentia ab æquatione solstitiali subducatur, ac tempus residuo respondens quum de solstitio æstivo quæstio est, tempori quod inter observationes duas mediat detrahatur, cum de hyberno addatur.

Veluti si inveniendum proponatur solstitium hyemale anni 1733, extat eo anno ante solstitium tempus, die videlicet 16 Octobris, meridiana observatio a celeberrimo Celsio hoc gnomone habita distantie Solis a vertice gr. 53. 28. 42, post solstitium vero, die scilicet 25 Februarii 1734 eodem observante distantia illa inventa est nonnihil major nempe gr. 53. 33. 28, sed die 26 jam minor, scilicet gr. 53. 10. 59; propterea manifestum est reditum Solis ad eundem parallelum quem die 16 Octobris meridie occupaverat incidere inter meridiem utrumque dierum 25 & 26 Februarii, subductisque rationibus ex diurna distantie mutatione, quam fuisse apparet min. 22. 29 prodit hora 5. 5 post meridiem diei 25, qua hora Sol eandem illam declinationem est assequutus. Intervallum ergo temporis fuit dierum 132 horarum 5, min. 5, ejusque intervalli medium incidit in diem 21 Decembris hora 2. 32. Jam e Cassini tabulis meridie d. 16 Octobris æquatio Solis fuerat gr. 1. 52. 22, die vero 25 Februarii hora 5. 5 fuit gr. 1. 39. 14, quarum æquationum semidifferentia min. 6. 34. Veri solstitii tempus exhibent eadem tabulæ die 21 Decembris hor. 6. 13, eoque momento æquationem Solis statuunt min. 16. 1, ex qua deducta semidifferentia illa min. 6. 34, reliqua fiunt min. 9. 27, quæ quidem linea medii motus conficit horis 3. 50. Hoc ergo tempus ex die 21 Decembris hora 2. 32 deinceps numerarum verum solstitii momentum ostendit eodem die hora 6. 22.

Perutile est autem atque adeo necessarium Solstitii tempus ex duarum observationum conjugatione hoc pacto inventum e similibus aliis conjugationibus perferuari quo de eo certius liqueat. Ita in hoc quod indagandum sumi decem observationum sibi respondentium paria nactus sum, e quibus solstitii horam elicui ut hic vides.

1733. 16 Octob. meridie	& 1734. 25 Febr. h. 5. 5;	inde Solstitium 21 Dec. h. 6. 22
21 Octob. meridie	20 Febr. h. 6. 1	h. 6. 20
22 Octob. meridie	19 Febr. h. 6. 13	h. 6. 20
29 Octob. meridie	12 Febr. h. 7. 28	h. 6. 20
10 Nov. meridie	31 Jan. h. 9. 42	h. 6. 27
11 Nov. meridie	30 Jan. h. 9. 29	h. 6. 16
12 Nov. meridie	29 Jan. h. 9. 50	h. 6. 22
14 Nov. meridie	27 Jan. h. 9. 59	h. 6. 13
15 Nov. meridie	26 Jan. h. 10. 4	h. 6. 15
27 Nov. h. 11. 58	14 Jan. meridie	h. 6. 32

ac propterea si ex hisce decem determinationibus media eligatur, tempus Solstitii accuratius constitutum erit die 21 Decembris hora 6. 20.

Ceterum cum inter primas a gnomone constructo observationes solstitium, quærerem quod cum iis quæ recenter observata sunt componerem, ac inde annum tropicum supputarem, nullum occurrit aliud cui accurate definiendo sat observationum suppeteret quam quod hyeme anni 1656 commissum est. Ad ejus tempus scrutandum tria hæc observationum paria reperi.

1656.26 Oct.h.23.13, & 1657.13 Feb.meridie; unde Solstitium 20 Dec.h.13.40

11 Nov.h.1. 5

29 Jan.meridie

h.13.44

27 Nov.h.1.56

13 Jan.meridie

h.13.24

quale solstitii tempus statui posse videtur die 20 Decembris hor. 13. 36.

Jam ergo si hoc solstitium cum eo componatur quod nuper hyeme anni 1733 definivimus, nonnihil operosior erit calculus, quod quadriennales periodi tempus hisce solstitiis duobus interjectum non metiantur. Ex anno igitur 1656 die 20 Decembris Gregoriani, sive 10 Juliani hor. 13. 36, ad annum 1733 die 21 Decembris Gregoriani, nempe iterum Juliani 10 hor. 6. 20, dies numerantur omnino 28123 horæ 16. 44, quæ si in minuta horaria resolvantur fiunt min. 40498080, atque hoc temporis intervallo anni ipsi tropici 77 expleti sunt. Subductis rationibus anno cuilibet tropico obtingunt dies 365 hor. 5. 49. 5 si veros motus spectemus. Sed cum anno 1656 æquario solstitialis hyberna ex tabulis Cassinianis fuisset min. 13. 23, atque idcirco solstitium verum medio succederet horis 5. 26, anno autem 1733 æquatio fuerit min. 16. 1, ac propterea verum solstitium post medium contigerit horis 6. 30, contrahendum est intervallum hora 1 min. 4, & anni quantitas secundis fere 50 minuenda, ut fiat dierum 365 hor. 5. 48. 15.

Animadvertendum est autem ad anni tropici medii investigationem æquinoctia solstitiis in eo præstare quod apsidum motus, sine quo neque æquationes inveniri neque adeo medii, ac veri anni differentia taxari potest, nisi subtilissime sit exploratus longe majora in solstitiis quam in æquinoctiis discrimina efficiat. Qua porro ratione motus ille ex ipsis hisce observationibus investigari possit, explanandum restat; sed antea de ipsorum solstitiorum temporibus nova quadam, ac ni fallor certiori methodo inveniendis, quin etiam de longitudine Solis toto anno accuratius cognoscenda nonnulla mihi dicenda sunt.

CAPUT XX.

Nova methodus longitudini Solis in singulos dies definienda, ut neque refractionum ratio habenda sit, neque loci latitudo, neque obliquitas ecliptica neque ulli ex astronomorum hypotesibus numeri assumi debeant.

Quæcumque de usu harum observationum in exquirendis Solis motibus hætenus diximus, atque exemplis illustravimus satis ni fallor instrumenti præstantiam declarant. Sunt tamen in hac re quidam certitudinis limites quos vel perfectissimis instrumentis transgredi ars ipsa non finit, nisi forte observationibus altitudinum aut distantiarum a vertice aliæ adjungantur. Non enim æque certo ac subtiliter (quod sæpe notavimus) verus Solis locus in ecliptica ex meridianis distantis a vertice dignosci potest atque ipsæ distantie determinantur, in quibus secundorum ut plurimum quinque interdum etiam binorum

norum aut singulorum dubietatem facile vitamus, cum in illo de uno saltem vel altero scrupulo primo sæpe etiam de tribus aut quatuor, eoque amplius ambigi necesse sit. Nimirum ut longitudinem Solis eruas ex ejus declinatione computum ineas oportet, quæ certa esse nequit nisi primum distantia a vertice a refractionibus liberetur; refractiones vero ad ipsa secunda scrupula constitutas esse, nec minimum interdum mutari nemo facile dixerit; deinde altitudo poli est prænoscentia, quæ ipsa & refractionibus iterum involvitur, & ob ejus inconstantiam novis ac majoribus difficultatibus rem impedit. Postquam declinatio utcumque innouit si observatio prope æquinoctia incidat ubi quam minimum in longitudine supputanda errari potest, tamen erratum semillis minuti sesquiminuto fere longitudinem vitiat; sin autem longius ab æquinoctiis tum vero & quo magis ab his receditur errores magis excrescunt & altera insuper existit errandi causa ab inordinata necdum satis comperta eclipticæ trepidatione profecta, ex quo rursus tantumdem atque ex declinationis incertitudine falli potes.

Una superesse videtur solstitiorum determinatio quæ si ea methodo ineatur quam superiori capite exposuimus hisce difficultatibus non laborat; non enim in ejusmodi supputationibus aut refractiones, aut altitudinem poli, aut eclipticæ inclinationem moramur, quinimo ne instrumenti quidem constitutio, si illud forte minus recte habuerit, quicquam turbat, ut propterea haud immerito recentiores astronomi plus uni ejusmodi determinationi quam sexcentis extra solstitia fidendum existiment. Verum, ut omittam non maximo operæ pretio duobus denique toto anno diebus Solis locum definiri, reliquis vero omnibus nihil exquisitè statui, illud non injuria argui posse videtur quod ad solstitia eo pacto inveniendæ æquationes Solis ex astronomorum tabulis assumi debeant; cum enim tabulæ ipsæ ab observationibus vel condendæ vel emendandæ sint, minus recte neque ordine fieri videtur si observationes absque tabulis usui esse nequeant. Ac sane haud semel expertus sum ubi e duabus iisdem observationibus ejusdem solstitii tempus exquirerem, haud parum diversum prodire si æquationes e diversis tabulis depremerem. Veluti cum solstitium æstivum anni 1734 indagarem ex observatione Solis diei 16 Aprilis meridie cui respondere inveneram diem 26 Augusti hora 23.22, Cassinianæ æquationes solstitium in diem 21 Junii hora 7.48, Hireanæ vero in eundem diem hora 7.37 conjiciebant; ac rursus ex observatione diei 8 Aprilis meridie, & diei 4 Septembris hora 1.1 Cassini hypoteses exhibebant solstitium hora 7.48, Hireæ vero 7.32. Ac tametsi existimo minus diffidii reperendum fuisse ubi dierum solstitio propiorum observationibus usus essem, tamen perpendendum est quo propius ad solstitium acceditur eo difficiliorem fieri temporum duorum sibi respondentium inventionem, quibus nempe temporibus Sol eundem parallelum attingat, quod diurna ejus altitudinis variatio perpetuo minor fiat; ut propterea in hac methodo alterum e duobus vix effugere liceat nimirum ut vel tabulis, vel observationibus ipsis plus æquo tribuamus.

Cum hæc mecum ipse reputarem animadverti difficultates omnes quæ hanc indaginem impediunt declinari posse si observationibus hoc gnomone peractis aliæ adjungantur quibus & Solis & inerrantium stellarum excursus per meridia-

dianum horologio oscillatorio determinentur. Methodum ergo tradam qua & solstitia & ceteræ omnes Solis longitudes accuratissime inveniuntur, ita quidem ut neque refractiones neque poli elevationem neque eclipticæ obliquitatem (nisi hanc præterpropter) prænosci, neque vero fixarum stellarum positiones, neque numerum ullum ex astronomorum tabulis assumi oporteat, quinimo ut stellarum ipsarum ascensiones eadem opera inveniuntur.

Locum Solis in meridiano quam sæpissime potes cuni ante solstitia, tum iis elapsis observato permagno ac immoto instrumento, cujusmodi Bononiensi huic par haud facile reperies; indeque temporum binorum conjugationes quotlibet elicto, quibus temporibus centrum Solis unum aliquem eundem, circulum æquatori parallelum pertransierit, quemadmodum superiori capite dictum. Iisdem diebus transitum per meridianum tum centri Solis tum stellæ insignis quæ toto anno per diu videri possit ex horologio oscillatorio definito, idemque per dies ipsos solstitiales præstato, ac subinde distantiam temporariam Solis a stellâ ad singulorum dierum meridiem supputato, eamque distantiam, horologio ad eandem stellam dietini expenso, in tempus medium redigito. Esto jam in supremâ sphaera æquinoctialis circulus ACL (*Figura 6*) ejus poli P, R, eclipticæ semicirculus uterlibet ASL, ac in eo solstitiale punctum S per quod transeat colurus solstitiorum PSR, circulus vero æquatori parallelus in quo observationum duarum respondentium tempora definita sunt DGE, eclipticam secans in D ubi prima observatio habita fuerit, atque in E ubi altera, colurum vero solstitiorum in G. Denique esto punctum F locus stellæ, cujus excursus per meridianum dietini observatur, ac per F transeat circulus declinationis stellæ PFR, parallelum EGD secans in H. Manifestum est igitur, etiam momentum solstitii ob inæqualem Solis motum in ipsum medium temporis inter observationes duas in D & E interjecti non incidit, at tamen arcum paralleli DE a coluro solstitiorum PCR bifariam dividi in G, ac propterea ascensionem rectam solstitialem inter ascensiones duas rectas quas Sol in D, atque in E habuit esse exquisitè mediam. Quoniam ergo dantur ad singulos dies ex observationibus temporariæ distantie centri Solis ac stellæ, dabitur ad tempus ipsum observationis ante solstitium peractæ in D arcus paralleli DH distantie illi respondens, pariterque arcus HE competens tempori regressus Solis post solstitium ad parallelum eundem in E; quare & arcus totus DE, & ejus dimidium DG dabitur, quod cum arcu DH, vel HE collatum indicabit arcum HG distantiam scilicet temporariam quæ ipso solstitii momento inter Solem S, & stellam F intercessit, quam solstitialem distantiam appellabimus. Eapropter cum per ipsos solstitii dies temporaria distantia Solis ac stellæ meridie ab observationibus definita fuerit, dabitur exinde tempus quo hæc distantia invento nuper arcui HG æqualis fuit, nempe tempus ipsum quo Sol colurum solstitiorum pertransiit, ac solstitium in puncto S effecit.

Inventa distantia solstitiali Solis ac stellæ HG, facile apparet si arcus circuli tenipori ejus distantie competens in æstivo solstitio gradibus 90, in hyberno autem gradibus 270, pro diverso stellæ ad Solem positu addatur vel subducatur rectam stellæ ascensionem ad tempus ipsum solstitii exinde constari. Hac vero comperta perspicuum est ceteris omnibus anni diebus, quibus Solis stellæque

laque transitus observati fuerint, rectam ascensionem Solis nullo negotio erui, quæ ubi graduum 180 vel 360 inveniatur æquinoctiorum tempora ostendet, ubi vero Sol extra æquinoctia versetur, tamen ex ascensione recta longitudo erui poterit, modo ecliplicæ obliquitas præterpropter nota sit; non enim ad hoc necesse est eam exquisitè definire, quando vel solidi minuti discrimen secundis ut maxime duodecim, haud amplius, longitudines vitare potest.

Methodi hujusce, in quam non ante superiorem annum 1734 incidi, statim, in utroque solstitio ejus anni perscrutando periculum feci, observationes peragentibus ad Divi Petronii partim ornatissimo viro Andræ Celsio, quoad is Bononiæ est diversatus, partim Roverio; transitus vero Solis per meridianam lineam in hoc publico observatorio extento filo designatam captantibus ut plurimum Marchesio, necnon Eustachio Zanotto, interdum me ipso quum per valetudinem licuit. Elegimus autem ad hanc indaginem stellam Sirii, quæ multis de causis omnium aptissima est visa, iidemque ejus stellæ transitus observarunt per planum muralis semicirculi, quod plurimis experimentis comper-

tum habemus in parallelo stellæ secundis temporariis $13\frac{1}{2}$ a meridiana illa lineâ in occasum abeatrate, unde singulos stellæ excursus ad ipsam meridianum reduximus. En autem in synopsi primùm ad æstivi solstitii indaginem conjugationes undecim temporum sibi respondentium recursus Solis ad eisdem parallelos, necnon ejus distantias temporarias a Sirio tam ante solstitium quam post, temporibus mediis expressas, ac denique distantias ipsas temporarias solstitiales quas e conjugationibus singulis supputavi.

Conjugationes	1734	1734	Ante solstitium		Post solstitium		Distantia temporaria solstitiales a Sole ad Sirium		
	Tempora ante solstitium.	Tempora respondentia post solstitium temp. app. post mer.	Sirius sequitur Solem temp. med.		Sirius præcedit Solem temp. med.		ad Sirium temp. med.		
			H I		H I II		H I II		
1	31 Martii meridie	12 Septembris 3. 4	5. 53. 53		4. 47. 8		0. 33. 22		
2	5 Aprilis meridie	7 Septembris 2. 14	5. 35. 44		4. 29. 31		0. 33. 20		
3	6 Aprilis meridie	6 Septembris 1. 43	5. 32. 51		4. 23. 28		0. 33. 21		
4	8 Aprilis meridie	4 Septembris 1. 1	5. 24. 49		4. 18. 6		0. 33. 21		
5	9 Aprilis meridie	3 Septembris 0. 48	5. 21. 11		4. 14. 25		0. 33. 23		
6	11 Aprilis meridie	1 Septembris 0. 21	5. 13. 53		4. 7. 7		0. 33. 23		
7	12 Aprilis meridie	31 Augusti 0. 9	5. 10. 14		4. 3. 27		0. 33. 23		
8	15 Aprilis meridie	27 Augusti 23. 28	4. 59. 13		3. 52. 26		0. 33. 23		
9	16 Aprilis meridie	26 Augusti 23. 23	4. 55. 31		3. 48. 46		0. 33. 22		
10	4 Junii meridie	8 Julii 16. 19	1. 44. 56		0. 38. 14		0. 33. 21		
11	5 Junii meridie	7 Julii 15. 56	1. 40. 50		0. 34. 4		0. 33. 23		

Ex hisce determinationibus solstitialem distantiam eligendam apparet hor.

0. 33

o. 33. 22 quippe inter omnes mediam. Porro transitus Solis ac Sirii per meridianum, qui diebus solstitio proximis observati sunt distantiam hanc a Sole ad Sirium convenisse ostendunt in diem 21 Junii hora 7. 52 tempore apparenti, quæ propterea est ipsa solstitii hora, vix quicquam ab ea discrepans quam Maraldi methodo eliciit e conjugationibus 1, 4, 7, 9, 10, 11, nempe 21 Junii hora 7. 49.

Huic autem solstitiali distantie respondent circuli partes 8. 21. 52, quæ adjectæ gradibus 90 ascensionem rectam Sirii constituunt ad exitum Junii 1734 graduum 98. 21. 52.

Ad indagandum vero solstitium hybernium ejusdem anni 1734 quinque haud amplius nacti sumus observationum paria quæ sequuntur.

Conjugationes	1734	1735	Ante Solstitium Sirius præcedit Solem			Post Solstitium Sirius præcedit Solem			Distantia temporaria solstitialis a Sirio ad Solem		
	Tempora ante Solstitium.	Tempora respondentia post Solstitium. temp. app. post mer.	temp. med.			temp. med.			temp. med.		
			H	I	II	H	I	II	H	I	II
1	12 Novembris meridie	19 Januarii 11. 17	8.	54.	50 $\frac{1}{2}$	14.	14.	15	11.	24.	37 $\frac{3}{4}$
2	13 Novembris meridie	18 Januarii 11. 37	8.	38.	53 $\frac{1}{2}$	14.	10.	10	11.	24.	36 $\frac{1}{2}$
3	14 Novembris meridie	11 Januarii 11. 54	8.	42.	58	14.	6.	17	11.	24.	37 $\frac{1}{2}$
4	18 Novembris meridie	13 Januarii 11. 48	9.	41.	40	13.	7.	34 $\frac{1}{2}$	11.	24.	37 $\frac{1}{4}$
5	19 Novembris meridie	13 Januarii 0. 7	9.	45.	59	13.	3.	21 $\frac{1}{2}$	11.	24.	40 $\frac{1}{4}$

Non adeo certo liquere potuit de hujusce solstitii tempore atque de eo quod æstate commissum erat, quod diebus ipsis solstitialibus vel Solis vel Sirii conspectum in meridiano nubes prohibuerint. Attamen electa solstitiali distantia omnium media hor. 11. 34. 38 ex observationibus dierum 17 & 23 Decembris collegimus Solem eam distantiam attigisse die 21 hora 12. 11. Maraldi autem methodo solstitium prodiit hora 12. 21.

Porro distantie temporariæ solstitiali hor. 11. 24. 38 competunt gr. 171. 37 37 qui e gr. 270 subducti dant ascensionem rectam Sirii sub exitum Decembris anni 1734 gr. 98. 22. 23.

Notandum autem motum illum quo stellæ singulæ sensim progrediuntur, sive æquinoctialium punctorum præcessionem, solstitiorum determinationi hac methodo peractæ nihil officere, ac propterea nullam ejus rationem a me in hisce calculis habitam; perinde est enim sive ascensio recta stellæ eadem maneat sive æquabile augmentum perpetuo suscipiat, nam cum temporariæ distantie Solis ac stellæ in punctis D & E inter se se comparantur diuini ejus incrementi in solstitiali distantia includitur neque inde solstitii tempus quicquam mutatur, ascensio vero stellæ quæ inde elicitur ad neutrum tempus D vel

vel E, sed ad ipsum solstitii momentum attinet. Diebus vero aliis a solstitio remotioribus plane habenda est ratio motus fixarum quo ex ascensione stellæ Solis ascensionem arguere liceat, cujus motus quantitas annua (nisi eam veluti certo ab astronomis constitutam assumere lubeat) ex duorum cognominum solstitiorum aliquot annis distantium observatione taxari potest.

Non ignoro quid scrupuli suboriri possit in hujusce methodi usu. Cum enim rectæ stellarum ascensiones minime pro temporum intervallis æquabiliter augeri deprehensæ sint, (qua de re nonnullæ etiam nostræ observationes extant) dubitandum videtur num ea ex causa solstitiorum determinatio turbari possit. Verum nihil aut exiguum quiddam incommodi metuendum inde crediderim. Stellarum enim evagationes secundum ascensionem non aliter perspectæ sunt quam ex duarum earumdem temporaria differentia, quæ aliis anni diebus alia est inventa, paucorum sane secundorum discrimine; cujus discriminis si eam quam æquum est partem stellarum inter se se accessui aut recessui (qui secundum ascensiones aliquis esse debet) tribuamus, residui vero semissem aut præterpropter singulis illis stellis duabus adscribamus, vix est ut singularum inæqualitas tota paucula temporis secunda excedat, quæ tamen ne tota quidem in hac re attendi debet, observationes enim non semestri spatio, sed minori inter se distitas ad hanc indaginem seligere possumus.

Optandum equidem est ut de harum aberrationum legibus astronomi aliquid constituant, cui rei virum egregium Jo: Jacobum Marinonium Cæsareum mathematicum sedulam navare operam ab ipso accepi. Mihi, quantum experiri hæcenus licuit in stellis inter se se oppositis, Sirio præsertim ac Lyra, aut capella & Lyra maximarum evagationum ascensionalium termini in ea tempora incidere videntur quibus earum stellarum altera meridie, altera media nocte ad meridianum allabitur, ita quidem ut tempus ab ea quæ Soli jungitur ad eam quæ opponitur numeratum tunc sit maximum, id quod ostendere videtur stellæ singulas prope conjunctionem ascensionalem in occasum, prope oppositionem in ortum aberrare, neque ab hac regula, quam ante annos aliquot subolsfeceram, abhorrent observationes cum multæ a Marinonio, tum aliquæ a nobis superiore anno peractæ. Quod si ita est, erroris periculum (ad solstitia quod attinet) evitari, aut certe minui potest ubi stellam seligamus non longe a coluro solstitiorum locatam, id quod præsertim de Sirio ac Lyra percommode accidit, duorum enim aut trium mensium spatio stellæ ascensionem vix quicquam mutari oportet. Alias vero longitudines Solis, cum longius a solstitiis distat, etsi errori alicui hac de causa obnoxias esse non negaverim, tamen longe minus incertas arbitror quam si per declinationes investigentur. Sed & minus ab hisce fallaciis timendum erit si pro anni temporum diversitate stellæ aliæ ad hanc indaginem eligantur, quarum ascensiones ex prioris stellæ ascensione eliciantur, quo tempore de illius aberratione nondum suspicio pervaserit.

Duorum autem aut plurium solstitiorum sibi continenter succedentium determinationes hac methodo peractæ evagationibus ipsis stellarum taxandis non inutiles esse possunt. Si enim ab æstivo solstitio ad brumale, vel ab hoc ad illud stellæ ascensionem rectam plus minusve adauctam appareat quam semestris punctorum æquinoctialium præcessio requirat, quicquid prodit discrimini

stellæ evagatio est. Veluti in solstitiis duobus anni 1734 cum ascensio Sirii æstivo inventa sit gr. 98. 21. 52, hiberno 98. 22. 23, apparet augmentum ejus semestri spatio fuisse sec. 31 cum tamen eo tempore proprius fixarum motus secundum ascensiones secunda 20 haud amplius sibi vindicet, reliqua sunt igitur secunda 11 quibus stella a Junii ad Decembris exitum ortum versus est evagata; neque sane erroris hujusce plaga ab ea lege abhorret, quam supra statui, sed ad ejus quantitatem certius comprehendendam multorum solstitiorum experimenta colligenda videntur.

CAPUT XXI.

De motu apogæi Solis et solstitiorum observationibus eruendo.

Nunc ad motum absidum Solaris orbitæ revertor, quem motum ex hac ipsa meridiana linea observationibus investigari posse dixeram. Nec sane dubium est quin id possit methodo pervulgata. Si enim apogæi locus anno quopiam ab observationibus inveniatur. (cujus inveniendi ratio multiplex ab astronomis traditur, ac nos etiam nonnulla ea de re mox afferemus) ac rursum anno alio satis inde disisto idem præstetur, locorum duorum comparatio apogæi progressum annorum intervallo respondentem patefaciet. Verum cum perdifficile habeatur in apogæi loco plurium minorum errorem vitare, vix est ut hoc pacto ejus motus subtiliter constitui queat, nisi tempora pluribus seculis distantia inter se se conferantur; quæ ne a posteris expectanda sint, aliam quandam rei consiciendæ rationem proponam.

Definiatur quam accurate fieri potest uno aliquo anno utriusque solstitii tempus, ea præsertim ratione quam superiori capite tradidi, in qua nihil prorsus ex astronomicis tabulis tanquam notum assumitur, idemque fiat post annos circiter 100 inde evolutos. Jam si solstitialia singulorum annorum intervalla invicem comparentur satis subtiliter explorari poterit quæ inter annos illos duos absidum progressio fuerit. Esto enim in adjecto schemate diameter eclipticæ, quæ ad puncta solstitialia dirigitur, AB (*Figura 7*) cujus extremum A ad initium Cancræ, B ad Capricorni pertineat, signorumque ordo ex B per K ad A procedat. Eclipticæ ac telluris centum esto C, per quod astra sit absidum Solaris orbitæ linea EO, cujus extremum O apogæum est, extremum E perigæum. Cum ergo ævo nostro illud circiter octavum gradum Cancræ, hoc vero circiter octavum Capricorni versetur, proptereaque punctum æstivi solstitii A ad postremum anomalie quadrantem spectet, ubi æquationes medio motui adjiciuntur ut verus consister, manifestum est: quoties linea motus veri ad positum solstitiale CA revertitur lineam motus medii secundum longitudinem minus promotam fore quam CA, contra atque hiberno solstitio, quippe quod in quadrantem anomalie secundum incidit, ubi æquationes a medio motu subducuntur. Momento igitur solstitii æstivi priore anno observati esto linea motus medii in CH, momento autem hiberni ejusdem anni in CD. Deinde

de elapso eo annorum intervallo ex quo solstitorum observationes repetitæ sunt, cum linea apsidum EO ad aliquid spatii secundum signorum seriem progressa fuerit, necesse est majores fieri angulos OCA, ECB quos angulos lineæ mobilis OE cum immota solstitorum diametro BA continet; quapropter utraque æquatio solstitialis major evadet, ac lineæ mediæ motus in solstitio æstivo adhuc minus promota erit, veluti in CG, in hiberno autem magis promota ut in FC. Angulus igitur DCH qui prior anno intervallum temporis a solstitio hyemali B ad æstivum A metiebatur, contractus erit in FCG, ac propterea tanto minus temporis inter ea solstitia intercedet quantum summa angulorum DCF, GCH postulat, tanto vero plus ab æstivo ad hibernum numerabitur.

Assumpta igitur certa aliqua mensura annua motus apogæi, supputa ejus motus quantitatem quæ annorum intervallo competit, ac subinde quære in tabulis astronemicis circiter eos gradus anomalix, qui gradus solstitialibus punctis A, & B respondent, quanto utraque æquatio Solaris BCD, ACH augetur, ubi anomalia ea quantitate motus augetur; ita enim angulos DCF, HCG constabis, ac subinde tempus eorum angulorum summx, pro horatio motu Solis medio, congruens supputabis. Tum vero ut hoc tempus ad decremennum intervalli quod a solstitio hiberno ad æstivum priore, ac posteriore anno intercessit, (vel ad incrementum ab æstivo ad hibernum) ita erit assumpta motus annui apogæi quantitas ad verum ejus motus quantitatem. Etsi vero neque solstitorum binorum ac binorum observationes adeo distat extant in hac serie quam tradimus, nec præter duo anni 1734 alia sunt ulla quæ per stellarum observationes scrutatus fuerim, duo tamen omnium quæ utraque, eodem anno extent antiquissima, Maraldi methodo supputata, cum postremis hisce duobus conferam, ut methodum exemplo aliquo explenam.

Solstitium igitur æstivum anni 1695 conjugationibus quinque observationum relictis Solis ad eisdem circulos parallelos definivi die 20 Junii hora 21 38, hibernum vero conjugationibus similibus sex determinavi die 21 Decembris hor. 0.52. Fuit ergo intervallum ab æstivo ad hibernum dierum 183 hor. 3.14. Anno autem 1734 ante invenimus conjugationibus undecim ejusdemmodi observationum, adjunctis temporariis distantis Solis a Sirio, incluisse solstitium æstivum in diem 21 Junii hora 7.52, hibernum vero conjugationibus quinque una cum temporariis totidem distantis, in diem 21 Decembris hora 12.11; ac propterea intervallum ab æstivo ad hibernum prodit dierum 183 hor. 4.19. Ejus ergo intervalli augmentum ab anno 1695 ad 1734 fuisse apparet horæ unius, minutorum quinque, idque spatio annorum 39. Jam si motus annuus apogæi sumatur secundorum 60, annis 39 competent utique minuta 39. Porro in tabula Cassiniana æquationum Solis ubi anomalia fuerit signorum 11 grad. 22, quæ est præterpropter æstivo solstitio, mutatio anomalix minutorum 39 æquationem niuat minutis 1.18; ubi vero anomalia sit signorum 5.22 (quæ hiberno) augmento anomalix minutorum 39 respondet æquationis incrementum minutorum 1.20. Augmenti igitur utriusque, nempe angulorum HCG, DCF summa est minutorum 2.38, quæ Sol medio motu emittitur hora 1. min. 4, ac tantundem auctum fuisse oportuit solstitiale intervallum

lum ab æstate ad brumam ex anno 1695 ad annum 1734, si annuus apogæi motus sit secundorum 69, quantum eum posuimus. Cui ergo ex intervallis observatis augmentum fuerit hor. 1. 5 erit ut hor. 1. 4 ad hor. 1. 5 ita assumptus ille motus sec. 60 ad verum apogæi motum annum, secundorum scilicet plus minus 61; nec valde diversus motus in hoc exemplo elicitur si ex Hæranis aut Neutonianis tabulis æquationes petantur.

Spatium porro annorum plus minus centum satis esse videtur quo motus apogæi annuus intra duorum præterpropter secundorum fines cetero comprehendatur, si modo solstitia quatuor eligantur, quorum binorum intervalla singula minus scrupulis quatuor horarils, & intervallorum differentia minus octo a vero abscedat; errori enim minorum octo annis centum errorem secundorum plus minus duorum in apogæi motu annuo respondere comperi.

Porro solstitia tam exquisitè ab hisce observationibus definiri posse, ut proximorum duorum intervalla minutis octo non fallant, experimento eorum ipsorum quæ memoravimus liquere potest, si ea cum proximis aliis quæ itidem supputavi conferantur.

		hor. min.
Fuit enim solstitium æstivum anni 1695	Junii 20	21. 38
Hibernum vero ejusdem anni	Decembris 21	0. 52
Intervallum est	d. 183	3. 14
iterum hibernum anni 1695	Decembr. 21	0. 52
æstivum vero 1696 elicitur ex observationibus seriei quam tradimus	Junii 20	3. 30
intervallum	d. 182	2. 38
quod priori intervallo adjectum	d. 183	3. 14
constituit	d. 365	5. 52
Est vero anni tropici medii quantitas satis explorata	d. 365	5. 49
quam mensuram summa intervallorum excedit		3
debuit autem ab ea deficere ob apogæi motum annum, circiter		1
igitur intervallorum summa a vero abscedit minutis haud amplius		4

Similiter hibernum solstitium anni 1733 inventum est	Dec. 21	6. 20
æstivum vero 1734	Junii 21	7. 52
Intervallum igitur fuit	d. 182	1. 32
iterum æstivum 1734	Junii 21	7. 52
hibernum 1734	Decemb. 21	12. 11
intervallum	d. 183	4. 19
hoc vero priori intervallo additum	d. 182	1. 32

con-

CAPUT XXI.

conficit summam
annus tropicus medius

		85	hor. min.
d.	365	5.	51
d.	365	5.	49

quem inventa intervallorum summa excedit
cum tamen eam excedere debuerit, ob apogæi motum, tantummodo

2
1

error igitur summæ intervallorum haud amplius

1.

Denique intervallum ab æstivo ad hibernum 1695
collatum cum intervallo ab æstivo ad hibernum 1734

d.	183	3.	14
d.	183	4.	19

incrementum exhibet

1.	5
----	---

intervallum vero ab hiberno 1695 ad æstivum 1696
collatum cum intervallo ab hiberno 1733 ad æstivum 1734

d.	182	2.	38
d.	182	1.	32

decrementum ostendit

1.	6
----	---

quod priori incremento consentit intra

1

id quod intervalla singula recte habere evincit, esto solstitiorum ipsorum absoluta tempora non comprobet, cum fieri possit ut terna priora, quibus computandis æquationes e tabulis astronomicis peti oportuit, paribus dissidiis a vero aberrant. Si vero singula ea ratione determinentur, quam superiori capite exposui, nil opus erit quicquam e tabulis astronomorum assumi.

CAPUT XXII.

De loco ipso apogæi Solis investigando.

Multa quidem ad apogæi Solaris locum in ecliptica determinandum artificia ab astronomis excogitata accepimus, quorum præcipua retulit, ac exemplis illustravit Jacobus Cassinus, egregia dissertatione de hoc argumento edita in commentariis regię academïæ Parisiensis anni 1723. Inter ea illud præstare videtur quod ipse adinvenit, ac in eo positum est ut arcus duo eclipticæ æquales ab observationibus definiantur, quos arcus Sol pari temporis intervallo peragraverit; lineam etenim apsidum inter eorum arcuum terminos medio loco sitam esse oportet, quacumque demum lege Solarem motum exerceri, ejusque inæqualitates distribui ponamus. Ad eos autem arcus duos inveniendos quatuor longitudinum observationes requiruntur accuratissime peractæ; eaque de causa stellarum potius ac Solis exscursus per meridianum, quam Solis declinationes in rem hanc assumi jubet.

Non inutile tamen futurum arbitror si methodum aliam subjecero qua res confici queat duabus tantum observationibus per illos dies habitis quibus Solem prope apogæum, ac perigæum hæcere constat, quæ loca cum propter sol-

stitio-

stitionum viciniam astronomis intentata essent, quippe qui longitudinem per declinationes exquirere consueverant, contra maxime opportuna sunt ubi illa per ascensiones rectas ope stellarum investigetur, stellarumque ipsarum ascensionum ab observationibus solstitiorum constituantur.

Stellæ cuiuspiam Inerantis, veluti Sirii, distantiam temporariam a Sole momento æstivi solstitii definito, ac exinde ascensionem rectam stellæ supputato ea ratione quam capite 20 explicuimus. Subinde paucos post dies, cum Sol apogæo est proximus iterum temporariam ejus a stella distantiam observato, rectamque Solis ascensionem & ex ea longitudinem ad tempus ejus meridiæ conficito. Eadem omnia hiberno solstitio ac juxta perigæum repetito, sive eadem stella, sive alia rem conficere lubeat, modo stellæ ascensio recta per illud idem hibernum solstitium determinetur. His peractis perpendendum est rectarum omnium linearum quæ per centrum telluris duci possunt, quæque extremis earum punctis longitudes duas in ecliptica e diametro oppositas designent, unam esse absidum lineam quæ solarem orbitam bifariam secet; quo sit nulla præter apogæum, ac perigæum puncta duo in ecliptica opposita uspiam exillere quorum puriorum distantiam dimidio annuæ conversionis tempore Sol emetatur; vel potius (ne motum illum utut exiguum negligamus quo absides in annos singules progrediuntur) dimidio ejus temporis quo ab apogæo digressus ad illud revertitur; quod eundem tempus, si apogæi motum annuum esse constet secundorum 62 (quantum astronomi plerique omnes ponunt, ac nos etiam superiori capite præterpropter invenimus) dierum est 365 hor. 6. 14, ejusque dimidium dierum 182 hor. 15. 7; unde apogæi inquit huc denique redit: ut puncta duo in ecliptica inveniatur e quorum altero ad alterum intervallo dierum 182 hor. 15. 7 Sol perrexerit; puncta vero ipsa minime examussum opposita sint, sed dimidio motus annui apogæi nempe secundis 31 supra gradus 180 inter se distent. Id autem qua ratione effici possit ex observationibus illis duabus juxta absides habitis, facilius exemplo quam præceptis declarabimus. Sumemus autem in hoc exemplo motum diurnum Solis circa apogæum minorum 57. 10, prope perigæum autem min. 61. 11 quantum astronomorum tabulæ fere exhibent, neque observationes nostræ ad aliquot dies hinc inde ab absidum linea habitæ ab hisce numeris valde discrepant.

Superiore igitur anno 1734 solstitialem distantiam a Sole ad Sirium definivimus minorum 33. 22 temporis medii, ac propterea ascensionem rectam Sirii constituimus gr. 98. 21. 52, uti dictum capite 20. Die vero 29 Junii distantiam temporariam a Sole ad Sirium meridiæ invenimus min. 1. 35 temporis medii, nempe grad. 0. 23. 48; idcirco erat ascensio recta Solis gr. 97. 58. 4, ejusque longitudo gr. 7. 18. 57 Cancrî; sed cum propter æquationem temporis meridiæ verus medium subsequeretur minutis 3, fuerit oportet longitudo Solis die 29 Junii meridiæ medio gr. 7. 18. 50 Cancrî.

Rursum distantia solstitialis hiberna a Sirio ad Solem inventa est horarum 11. 24. 38 temporis medii, atque inde ascensio recta Sirii gr. 98. 22. 23. Postmodum die 30 Decembris Sirius sequebatur Solem temporibus mediis hor. 12. 216, nempe gradibus 181. 3. 40; unde ascensio recta Solis meridiæ gr. 279. 26

3, & longitudo gr. 8. 39. 57 Capricorni, sed cum iterum meridies verus medio succederet minutis 3, fuerit longitudo Solis die 30 Decembris meridie medio gr. 8. 39. 49.

Experiamur jam an certa quæpiam apogæi longitudo, quam pro arbitrio assumemus gr. 8. 0 Cancrî, illi quod supra diximus dimidiæ revolutionis intervallo respondeat. Si ergo die 29 Junii fingamus apogæum in gr. 8. 0 Cancrî, erit perigæum die 30 Decembris in grad. 8. 0. 31 Capricorni. Ex observatione diei 29 Junii & motu Solis diurno min. 57. 10, subductis calculis liquet Solem hora 17. 17 attigisse gr. 8. 0 Cancrî; ac rursus ex observatione d. 30 Decembris, diurnoque motu min. 61. 11 constat eum adventasse ad gr. 8. 0. 31 Capricorni die 29 ejus mensis hora 8. 35. Intervallum est dierum 182 hor. 15. 18 excedens minutis 11 dimidiam revolutionem quam supra invenimus dierum. 182 hor. 15. 7. Constat igitur Solem majori tempore quam dimidia illa revolutionem emensum fuisse eum arcum, qui ex gr. 8. 0 Cancrî ad grad. 8. 0. 31 Capricorni numeratur, ac propterea apogæum in hunc ipsum arcum incidere, & die 29 Junii promotius fuisse quam in gr. 8. 0 Cancrî.

Periculum ergo faciamus quid contingat si apogæum promoverimus minutis 10, ut die 29 Junii sit in gr. 8. 10. Cancrî, ac propterea perigæum die 29 Decembris in grad. 8. 10. 31 Capricorni. Supputatis iterum temporibus quibus Sol utramque hanc longitudinem est affecutus, prodeunt 29 Junii hor. 21. 29 & 29 Decembris hor. 12. 30. Intervallum est dierum 182 hor. 15. 1, deficiens jam a dimidia revolutione min. 6. Apogæum igitur ad finem Junii minus promotum erat quam in gr. 8. 10. Cancrî, ac intra duos hosce limites gr. 8. 0, & gr. 8. 10 ejus signi consistebat.

Nunc ergo cum apogæo promotio min. 10 differentia intervalli a dimidia revolutione, quæ differentia fuerat min. 11 excessus, redacta fuerit ad min. 6 defectus, apparet hanc differentiam mutatam minutis 17. Si ergo minuta 17 respondent diversitati apogæi minorum 10, necesse est minuta illa 11 quæ ex priori positione prodibant exhauriri si apogæum promoveatur ab eo posito tantum min. 6. 30, statuaturque in gr. 8. 6. 30 Cancrî, & quod inde consequatur, perigæum die 30 Decembris collocetur in gr. 8. 7. 1 Capricorni. Quod si ergo in hac hypotesi calculi iterum ineantur, apparebit Solem eas longitudes affecutum fuisse die 29 Junii hora 20. 1, ac die 29 Decembris hora 11. 8, intervallo scilicet dierum 182 hor. 15. 7, dimidio nempe ejus temporis quo ab apogæo discedens ad idem redit; ac propterea apogæi locum recte habere.

Quamquam autem hæc methodus motum annum apogæi veluti cognitum, assumat, qui nondum exacte est definitus, tamen expertus sum si ille motus paulo alius ponatur nihil fere apogæum variari, quinimo ne multum quidem interesse si nulla ejus motus habeatur ratio, modo dimidia revolutio tunc fiat dierum 365 hor. 14. 54, nempe æqualis semissi anni tropici; prodibat enim mihi ex apogæo immoto locus ejus in gr. 8. 7. 30 Cancrî, nempe minuto tantum promotior quam inventus sit posito motu annuo secundorum 62.

Ad hæc ut methodi subtilitatem tentarem, diurnum Solis motum in apogæo pro min. 57. 10 ponebam min. 57. 14, in perigæo autem pro min. 61. 11 assumebam min. 61. 9, quos scilicet motus observationes nonnullæ superiore anno a

nobis habitæ exhibent, apogæum tamen perparum inde mutabatur, hærebat enim circa gr. 8. 8 Cancrī.

Denique longitudinem Solis die 29 Junii meridie observatam nempe grad. 7. 18. 50 Cancrī meridie æquali minuebam secundis 15 ut esset gr. 7. 18. 35; longitudinem vero die 30 Decembris, gr. 8. 39. 49 tantundem augebam ut foret gr. 8. 40. 4, & calculis iterum positis apogæum nanciscebar in gr. 7. 59 Cancrī, discrimine minorum 6 vel 7 a priori determinatione. Unde inferre licet apogæum hac methodo satis certo ad decimam gradus partem constitui posse ab observationibus quibus singulis fallacia secundis 15 major non subfit, nempe quæ singulæ circiter scrupulum secundum temporis a recto non aberrent, cujuscumque subtilitas astronomorum facultatem non excedit.

CAPUT XXIII.

De Solaris orbita excentricitate definienda.

A Pogæi quidem indago si ejuscemodi aggressionibus instituat, absoluta est, neque ulli certæ hypotesi adstricta, excentricitatem vero Solaris orbitæ invenire minime in potestate est nisi orbitæ ipsius figura vel nota sit, vel tanquam nota spectetur. Eam figuram ellipticam statuunt recentiores astronomi, cujus ellipseos alter umbilicus telluris centro congruat; hac autem hypotesi assumpta si distantia tres Solis a tellure datæ fuerint, una cum angulis quas distantia ipsæ comprehendunt (differentiæ nempe longitudinum Solis, quæ distantis tribus respondent) ellipseos speciem, ac ex eo excentricitatem, quin etiam transversæ axis, nempe apsidum positionem inveniri posse geometris notum est. Distantias vero illas tres nancisci haud modicam difficultatem habet; si quis enim e diametrorum Solarium observationibus eas investigandas suscipiat vix est ut tantam subtilitatem assequi possit quanta in hoc negotio requiritur. Præclare quidem Hallejus quibusdam planetarum observationibus (præsertim Martis) ex certo temporis intervallo habitis quotlibet distantias telluris a Sole una cum longitudinum differentiis definiri posse ostendit, sed mihi quo minus hanc methodum experirer observationes idoneæ defuerunt.

Communis tamen astronomi ad excentricitatem Solis perquirendam non modo orbitæ figuram assumunt, sed & motus legem, qua lege in ejus figuræ perimetro revolvatur. Ac in illis sane hypotesibus in quibus centrum quoddam motus æquabilis in apsidum linea ponitur, circa quod centrum linea ad Solem ducta angulos comprehendat temporibus proportionales, haud difficile est excentricitatem perscrutari, si eadem opera qua apogæum ex datis tribus observationibus investigatur, si e apogæo seorsim invento, ex tempore quod ab eo ad alium quenvis in ecliptica positum Sol impendit, inde enim anomalia tam vera quam media colligitur, quarum differentia æquatio est; æquatione autem atque anomalia utralibet cognita excentricitas tam in circulo quam in ellipsi facile ex ejuscemodi hypothesibus eruitur.

In lege autem Kepleri qui centrum æquabilis motus nullum agnoscit, sed areas ellipticas temporibus proportionales ponit, excentricitatis inventio operosior est, ac fere inexplicabilis si directa methodo tractanda sit, neque enim datis tribus planetæ locis, eorumque temporibus, neque data anomalia media ac vera quæ illi respondet, ellipseos species geometricæ determinari potest. Itaque astronomi ad indirectas methodos confugiunt, cujusmodi methodum hypotesi huic aptavit Jacobus Cassinus ea dissertatione cujus superiori caute memini.

Possit tamen in ea hypotesi excentricitas geometricæ erui ubi maxima ac minima Solis celeritas subtilissime comperta foret; est enim (posita hac motuum lege) distantia Solis perigæi ad ejusdem apogæi distantiam in subduplicata ratione celeritatis in apogæo ad celeritatem in perigæo. Datæ autem distantiiis apsidum, summa est axis ellipseos, ac differentię dimidium excentricitas. Celeritates vero illas sat accurate mensuris comprehendere liceret si longitudo Solis ex stellæ alicujus comparatione diligenter investigaretur sex vel octo diebus antequam ad lineam apsidum perveniret ac totidem postquam eam prætergressus esset, quandoquidem & iis locis motum pene æquabilem esse constat, & errorculi si qui inter observandum admissi forent, evanescerent, cum duodecima vel sexagesima pars differentię earum longitudinum pro diurno motu acciperetur.

Veluti anno 1734 die 23 Junii meridie ex distantia temporaria a Sole ad Sirium, quæ observata est hor. 0. 26. 27 temporis medii, prodiit longitudo Solis grad. 1. 35. 26 Cancri. Die vero 8 Julii ex distantia a Sirio ad Solem hor. 0 35. 27 longitudo fuit gr. 15. 53. 55 ejusdem signi. Intervallum est dierum 15, differentia vero longitudinum gr. 14. 18. 29; idcirco motus diurnus Solis apogæi min. 57. 14. Similiter ex observationibus diei 25 Decembris erat meridie distantia a Sirio ad Solem hor. 11. 40. 5 $\frac{1}{2}$ temporis medii, & longitudo Solis gr. 3. 33. 39 Capricorni; die vero 6 Januarii distantia a Sole ad Sirium hor. 11. 23. 4 $\frac{1}{2}$, longitudo Capricorni 15. 47. 31; intervallum dierum 12, differentia longitudinum gr. 12. 13. 52 unde motus diurnus Solis perigæi min. 61. 9. Est ergo distantia perigæa ad apogæam ut radix quadratica min. 57. 14 five sec. 3434 ad radicem quadraticam min. 61. 9 five sec. 3669, quæ radices sunt inter se ut 5860 & 6058. Harum differentię dimidium 99 est excentricitas, seu distantia foci in quo tellus ponitur a centro ellipseos, si axis transversus radicum illarum summæ æqualis statuatur, nempe partium 11918, ac semiaxis partium earundem 5959; quapropter ubi semiaxis fiat, quemadmodum solet, partium 10000, erit excentricitas partium 1661. Sed celeritates illæ plurium annorum observationibus comprobandæ forent.

Potius ergo excentricitatem in Kepleri hypotesi exquirendam arbitror indirectis tentaminibus (quod a Jacobo Cassino præstitum dixi) utcumque enim astronomica exactitudinem æsequamur geometricam morari nihil est necesse. Præsertim vero ex usu esse potest si longitudo Solis exquisitè comprehensa fuerit quo tempore is ab utroque abside quadrante distat, nempe cum linea veri

M

motus

motus lineæ abſidum ad perpendicularum incidit. Ejuſmodi obſervationes duas naſtus ſum in multis quæ a Joſepho Marchefio, Euitachio Zanotto, Joſepho Roverſio, aliſque ſociis in hoc publico obſervatorio actæ ſunt anno 1734 per tranſitus meridianos Solis ac Sirii, cujus ſtellæ aſcenſio æſtivo ejuſdem anni ſolſtitio, (quod ſæpe diximus) accurate definita fuerat. Die enim 28 Martii meridie, nempe æquali tempore hor. 0. 5 Sol præcedebat Sirium horis 6. 4 43 temporis medi; ac propterea longitudo Solis erat gr. 7. 35. 5 Arietis. Kalendis vero Octobris meridie, hoc eſt æquali tempore die 30 Septembris hor. 23 50 Sol ſequabatur Sirium horis 5. 54. 58; itaque verſabatur in grad. 8. 0. 15 Libræ. Ex hiſce obſervationibus Solaris orbis excentricitatem hoc pacto inveſtigavi.

Apogæi locum retinui eundem quem ſuperiori capite invenimus ad exitum Junii 1734, in grad. 8. 6. 30 Cancr. Hunc ipſum poſitum etſi in hac indagine accuratiſſime prænoſci minime neceſſe erat, tamen ex hiſce obſervationibus mire comprobari apparebit. Quoniam autem apogæum ſingulis annis progreditur ſec. 62, atque ideo trimetiri ſpatio ſecundis præterpropter 15, fuerit ejus locus ſub finem Martii in gr. 8. 6. 15 Cancr; ac propterea quadrans circuli ab eo puncto incidet in grad. 8. 6. 15 Arietis. Cum ergo die 28 Martii hora 0. 5 æquali tempore Sol invenius ſit in Arietis grad. 7. 35. 5, cuiusque motus diurnus, ſatis per eos dies compertus, foret min. 59. 8, colligitur Solem gradibus ipſis 90 ab apogæo diſtitiſſe die 28 Martii hor. 13. 33 æquali tempore. Tempus autem quo Sol ad apogæum pervenerat ſupra ſtatuiſſus die 29 Junii hora 20. 1; intervallum ergo eſt dierum 93 hor. 6. 28; id quod & obſervatio alia Kalendis Octobris habita præclare confirmat. Cum enim eo meridie, ſive æquali tempore die 30 Septembris hor. 23. 50, deprehenſus fuerit locus Solis in gr. 8. 0. 15 Libræ, apogæum vero tunc eſſet in gr. 8. 6. 45 Cancr, ac motus Solis diurnus foret tunc min. 59. 8 conſequitur Solem die 1 Octobris hora 2 28 ruſum quadrante circuli ab apogæo abſuiſſe; intervallo ſcilicet dierum 93 hor. 6. 27 ex quo die 29 Junii hora 20. 1 apogæum attigerat, diſcrimine unius tantum minuti ab eo intervallo, quod ex obſervatione diei 28 Martii invenimus; id quod apogæum ipſum die 29 Junii in gradu 8. 6. 30 Cancr recte collocatum comprobat.

Perſpicuum eſt igitur ex utraque hac obſervatione tempus illud quo Sol gradus 90 hinc inde ab apſidum linea vero motu nectitur, ſtatui poſſe dierum 93 horarum 6. 28. Eſt autem tempus totum quo ab apogæo digreſſus ad idem revertitur (annus nempe anomalifticus) dierum 365 hor. 6. 14; ejuſque quadrans dierum 91 hor. 7. 33. 30, ſive ſecundorum 7889610; ſpatium igitur temporis quo Sol a linea apſidum gradibus 90 elongatur anni anomaliftici quadrantem excedit die uno, horis 22. 54. 30, nempe ſecundis 168870. Quod ſi ergo ellipticam Solis orbitam cogitemus eſſe AMD (Figura 8) cujus centrum B, apogæum A, perigæum D, focus vero in quo tellus ſtatuitur K, ut excentricitas, cujus meſura quaeritur, ſit BK, locus autem Solis ab apogæo gradibus 90 diſſiti S, ubi nempe normalis ad AB ex K ducta ellipſim ſecat; & ducatur ſemiaxis conjugatus BM; cum in Kepleri hypoteſi aræ ellipticæ a radio Solem vehente deſcriptæ temporibus ſint proportionales, maniſeſtum eſt ita eſſe

esse quadrantem ellipseos ad aream KSMA, ut quadrans revolutionis anomalisticæ ad intervallum temporis, quo Sol a puncto S ad apogæum A progreditur; & dividendo ita erit quadrans ellipseos ad aream KSMB, ut quadrans anni anomalistici nempe secunda 7889610 ad excessum quo intervallum illud quadrantem ejus anni superat nempe ad secunda 168870. Porro descripto super AD semicirculo AEOD, & productis BM, KS ad ejus peripheriam in E, O, constat quadrantem circuli esse ad aream circulearem KOEB ut quadrans ellipseos ad aream ellipticam KSMB; ergo ut secunda 7789610 ad secunda 168870 ita quadrans circuli, cujus mensura (posito radio BE partium 100000) est quamproxime 785400000, ad aream KOEB, quæ propterea erit earundem partium 168107800.

Ad inveniendum ergo punctum K secundus est quadrans circuli BED per rectam KO diametro AD normalem ut portio circularis KOEB sit partium 168107800 qualium quadrans 785400000. Id autem subductis calculis quamproxime obtineri apparebit si tantum area illa circularis 168107800 applicetur ad semidiametrum circuli EB, nempe si super BE fiat rectangulum BCFE areæ illi æquale; altitudo namque hujusce rectanguli BC minus centesima millesima particula semidiametri BE deficiet a recta BK, quæ circulearem aream rectangulo illi æqualem determinat. Erit enim BC partium 1681 qualium radius 100000; quapropter (ducta per punctum G ubi CF circulum secat, recta GH ad AE normali, junctaque GE) erit GH sinus grad. 0. 57. 48, ejus vero sinus complementi BH partium 99986, & Sagitta EH partium 14; unde rectangulum HF 23534, & triangulum rectilineum GEF 11767; mixtilineum igitur circulare GFE minus est quam 11767, huic autem mixtilineo æquari oportet spatium KOGC, (ut scilicet spatium KOEB rectangulo BF sit æquale) spatium igitur KOGC minus esse debet quam 11767. Rectangulum vero GCKI super CG constructum nusquam duplum esse potest spatii KOGC, ac propterea minus est quam 23534. Ponatur ut maxime 23534. Cum ergo CG, quippe æqualis BH, inventa fuerit 99986 erit altitudo CK quotiens ex divisione 23534 per 99986, nempe minor quarta parte unius e centesimis millesimis partibus radii BE. Omnino igitur BC & BK ad sensum non differunt. Inventa est autem BC 1681, excentricitas ergo RK & ipsa est 1681 earum partium, qualium BE, sive semiaxis ellipseos AB ponitur 100000. Ex hac excentricitate supputavi in eadem hypotesi æquationem maximam gr. 1. 55. 34. Hiraus habet 1. 55. 42, licet ex ejus logarithmis distantie apogææ ac perigææ Solis a tellure colligatur eadem excentricitas 1681; sed videlicet ipse æquationes a se traditas forte huic hypotesi non adstrinxit.

Solutionem aliam hujusce problematis eamque magis directam tentaveram existens dat s, ope theorematum quod Jacobus Cassinus in dissertatione illa demonstravit, nimirum: Si super axe primario AD (Figura 9) ellipseos parum excentricæ a planeta descriptæ APD, fiat semicirculus ACHD, atque ad centrum B ponatur angulus ABC anomalie mediæ, vel ejus residuo ad circulum æqualis, tum ex foco F in quo comprehenduntur areæ temporibus proportionales, ducatur recta FC eique per centrum æquidistans agatur BK, atque a puncto K ubi hæc semicirculo occurrit demittatur ad axem AD normalis KR,

secans ellipsin in puncto P, locus planetæ in orbita nihil ad sensum a puncto P discrepabit. Cum enim hoc in quolibet planetæ posito obtinere debeat, inde sequitur, ubi planeta fuerit in S, in ipsa scilicet recta FSH ad axem normali quæ per focum F transit, rectam BH parallelam fore rectæ FE quæ ex foco F ducitur ad punctum peripheriæ E in quo puncto angulus ABE anomalæ mediæ, ejusve residuo æqualis est; quapropter cum ex dato tempore adventus Solis ad apogæum A, necnon ad punctum S inde quadrante distans, detur angulus ABE, problema huc redibat: Dato in peripheria semicirculi AED puncto E, invenire in ejus diametro AD punctum F, ex quo erecta normali FH, quæ peripheriæ occurrat in H, recta FE æquidistet rectæ BH quæ ex H ad centrum B ducitur; ita enim punctum F erit ipse focus ellipseos, & BF excentricitas. Sed cum in æquationem ad quartum gradum assurgentem incidissem, indaginem hanc abieci.

Postmodum cum id totum significassem Josepho Bolsio Marchesio quicum diuturna mihi ac jucundissima in astronomicis studiis consuetudo intercedit, aggressus est ipse problematis solutionem; & posita semidiametro circuli = a , ac BI (sinu complementi anguli ABE) = b , excentricitate vero BF = x , æquationem invenit $x^4 - 2bx^3 + 2aabbx - aabb = 0$ neque ipsum piguit, ut est in analyticis rationibus exercitatissimus, calculum absolvere, ac radices quatuor hujusce æquationis investigare, quarum duas (A) imaginarias duas vero (B) reales comperit ea methodo quam vlr acutissimus Georgius Campbell tradidit in dissertatione quæ arithmeticæ universali Newtoni postremæ editionis subiecta est. Artificium vero universum quo hæc radices eruit non prosequor, ne ab instituto meo longius abeam

$$(A) x = b \rightarrow \frac{\sqrt[3]{bb - \sqrt[3]{4a^4bb - 4aab^4}}}{2} \rightarrow \frac{\sqrt[3]{2bb - \sqrt[3]{4a^4bb - 4aab^4}} + \sqrt[3]{2b^3 - 4aab}}{\sqrt[3]{bb - \sqrt[3]{4a^4bb - 4aab^4}}}$$

$$(B) x = b - \frac{\sqrt[3]{bb - \sqrt[3]{4a^4bb - 4aab^4}}}{2} \rightarrow \frac{\sqrt[3]{2bb - \sqrt[3]{4a^4bb - 4aab^4}} - \sqrt[3]{4aa^4 - 2b^3}}{\sqrt[3]{bb - \sqrt[3]{4a^4bb - 4aab^4}}}$$

Duarum ergo realium radicum (B) illam propositæ quæstioni satisfacere invenit in qua postremum numeratoris membrum irrationale signo \rightarrow afficitur. Itaque cum in observationibus duabus ante allatis tempus quo Sol a puncto S ad apogæum A progressus fuerat effet dierum 93 hor. 6. 27. 30, ac propterea angulus ABE, motus videlicet anomalæ Solis huic tempori debitus, foret gr. 91. 55. 33, cujus sinus complementi BI (= b) partium 3362, posito radio BD

BD (= a) partium 100000, ubi hosce numeros pro lineis a & b in radice illa subrogavit, prodit illi excentricitas BF (= x) partium earundem 1679, quantam fere ex priori tentamine inveneram.

CAPUT XXIV.

De media Solis longitudine, ejusque æquationibus vel absque excentricitatis notitia perscrutandis.

Inventa excentricitate, & comperto apogæi positu, ad constituendam certo aliquo tempore mediam Solis longitudinem, ex qua veluti radice aliorum omnium temporum longitudes mediæ eruantur, astronomen veras longitudes consulere solent per ea tempora observatas in quæ tempora æquationes præterpropter maximas convenire constat; quod nempe illis locis æquationis quantitas dato tempore quamminimè mutetur, ac propterea non valde errari possit tamen si apogæi locus minus certus fuerit. Itaque æquationem maximam ex nota excentricitate in ea quam sectantur hypotesi supputatam vero Solis loco adjiciunt in priori ab apogæo semicirculo, in posteriori subducunt, eoque longitudinem mediam elliciunt, quam deinde ad alia quælibet tempora proferunt.

Sed ubi verorum locorum observationes tres habeantur ita comparatæ, ut quæ medio loco acta est ab extremis & tempore & longitudine pariter distet, perfacile est, vel sine excentricitatis notitia, mediarum longitudinum radices figere. Ex intervalle etenim temporis a prima ad postremam datur motus Solis medius; datur autem & verus, itaque datur utriusque semidifferentiæ, quæ æquatio est alterutri extremarum competens, quandoquidem necesse est ut cum observationes iis conditionibus sunt præditæ media earum in ipsam apsidum lineam incidat, ac propterea extremarum æquationes pares sint. Æquatio igitur alterutri verarum longitudinum extremarum, pro casuum diversitate adjecta, aut subducta mediam longitudinem ad ejus observationis tempus patefaciet, atque ex ea epocha longitudes mediæ ad alia quælibet tempora deduci poterunt.

Veluti in allato nuper exemplo in quo observationes tres verarum Solis longitudinum retulimus, nempe: anno 1734 die 28 Martii hora 12.33 tempore æquali in gr. 8.6.15 Arietis; die 29 Junii hora 20.1 in gr. 8.6.30 Cancris; ac die primo Octobris hora 2.28 in gr. 8.6.45 Libræ, cum & longitudes exquisitæ, & tempora unius tantum minuti discrimine respondeant, intervalum autem temporis duarum extremarum sit dierum 186 hor. 12.55, erit motus medius huic temporis debitus signorum 6.3.51.37; extremarum porro longitudinum verarum differentia est signorum 6.0.0.30; excessus igitur motus medii a vero graduum est 3.51.7, cujus differentiæ dimidium grad. 1.55.33 æquatio est, quæ alterutri earum longitudinum congruit. Si ergo hæc subducatur a longitudine vera prioris observationis sign. 0.8.6.15 (quippe quæ

in secundum ab apogæo semicirculum incidit) fiet longitudo mediæ ad diem 28 Martii 1734 hora 13.33 tempore æquali in meridiano Bononiæ, signorum 0.6. 10.42; ex quo eruitur epocha longitudinis mediæ Solis anni 1734, nempe die 31 Decembris 1733 Bononiæ meridie æquali (qui meridianus Parisiensis orientalis est minutis temporariis 36) signorum 9.9.52.14. Cassinianæ tabulæ, ac fere Hireanæ habent signa 9.9.52.7, præclaro cum observationibus hinc consensu. Anomalix autem mediæ quibus æquatio illa grad. 1.55.33 respondet, erunt signorum 8.28.4, & signorum 3.1.56; ac propterea hæc ipsa æquatio a maxima quamminimū deficere potest. Exquisite ergo respondet æquationi maximæ gr. 1.55.34, quam nuper in Kepleriana hypotefi ab excentricitate inventa partium 1681 supputavimus, licet ea excentricitate in hac postrema æquationis indagine usi non fuerimus. Hoc pacto & apogæum, & excentricitatem, & longitudes medias, singula seorsim, ac investigationibus longe diversis inventa mire conspirare invenimus.

Quod si eodem pacto aliæ atque aliæ observationes componantur, quæ conditiones easdem servent & apogæi locus & mediæ longitudes certius adhuc comprobabuntur, & præterea æquationes ad plurima anomalix puncta, nulla assumpta hypotefi, ab experimentis inveniri poterunt.

Veluti meridie diei 22 Aprilis ejusdem anni 1734, nempe 21 Aprilis hora 23.59 tempore medio, Solis centrum præcedebat Sirius horis 4.33.17 $\frac{1}{2}$ temporis mediæ, ac propterea longitudinem habebat gr. 2.2.2 Tauri. Apogæum ex ejus loco mox constituto erat tunc in grad. 8.6.19 Cancræ; distabat igitur Sol ab apogæo signis 2.6.4.17. Jam vero meridie d. 7 Septembris nempe die 6 hor. 23.58 æquali, Sol sequebatur Sirius hor. 4.28.43 $\frac{1}{2}$, eratque in gradu 14.30.14 Virginis; apogæum vero in gr. 8.6.41 Cancræ, quare Sol ab apogæo distabat sign. 2.6.23.33; hæcque distantia major est priore illa minutis 19.16. Motus diurnus Solis die 7 Septembris erat min. 58.23, quapropter minuta illa 19.16 conficiebat horis 7.55; idcirco die 6 hora 16.3 erat in gr. 14.10.58 Virginis, distans iterum ab apogæo signis 2.6.4.17 ut in priori observatione. Intervallum temporis ex die 21 Aprilis hor. 23.59 in diem 6 Septembris hor. 16.3 dierum est 137 hor. 16.4, ejusque intervalli medium incidit in diem 29 Junii hor. 20.1 qua ipsa hora ac minuto supra invenimus Solem occupasse grad. 8.6.30 Cancræ ubi apogæum statuimus; ac propterea apogæum recte positum, ac omnia præclare cohærere liquet. Jam ex grad. 2.2.2 Tauri ad grad. 14.10.58 Virginis intercedunt signa 4.12.8.56, qui fuit verus Solis motus intervallo dierum 137 hor. 16.4; Medius vero motus eodem tempore est signorum 4.15.41.35; differentia veri a medio gradum 3.32.39, cujus dimidium grad. 1.46.20 est æquatio utrilibet harum observationum temporis competens; quæ priori longitudini subducta, signis nempe 1.2.2.2 constituit mediam longitudinem Solis die 21 Aprilis hor. 23.59 signorum 1.0.15.42; ac propterea die 31 Decembris 1733 meridie æquali Bononiæ fuerit longitudo mediæ signorum 9.9.52.12: duobus haud amplius secundis ab ea deficiens quam nuper ex aliis observationibus duabus supputavimus. Anomalix
vero

vero mediæ quibus æquatio illa grad. 1. 46. 20 congruit erunt signorum 9. 22 9, & signorum 2. 7. 51.

Æquationes vero Solis hoc pacto ab experimentis deprehensæ cum illis conferri poterunt quæ in Hypotesi quolibet ex constituta excentricitate in iisdem anomaliz locis computo inventæ fuerint, atque hoc pacto hypotesicon examen institui ac optimarum defectus haberi; tum vero Solis distantiz a tellure singulis anomaliz partibus respondentescalculis erui. Quin etiam explorare licebit an eadem perpetuo in eadem anomalia fervetur æquationum mensura, an vero quicquam mutetur, ac propterea excentricitas ipsa aliis temporibus alia sit; id quod haud temere suspicari possumus, quando æquationem maximam a Cassino olim definitam circiter grad. 1. 56. 52 haud maiorem nunc invenimus grad. 1. 55. 33 vel 34. Observationes vero in hunc usum ea potissimum methodo peragendæ videntur quam capite 20 tradidimus, constitutis videlicet partim ex hoc aliove gnomone, partim ex temporaria Solis stellarumque distantia, solstitiorum articulis, ac reliquis servatis quæ subinde præcepimus; ea enim & maxime simplex ratio est & nihil ex aliorum fide assumit.

Hæc singula fusius prosequi & pluribus exemplis illustrare decreveram, quin etiam æquationum tabulam ab observationibus conficere, atque huic opusculo inferere. Sed quando ad hoc & plurium annorum observationes eadem methodo peractæ requirebantur, & valetudine utebar minus commoda, maturandum duxi, quo ea saltem exequorer dum possem, quæ ad gnomonem hunc nostrum ejusque status diversos pertinent; quorum plurima cum vel memoria retinerem, vel chartis nullo ordine mandassem, vix erat ut quisquam alius post me aggredi, ac instrumenti ad hoc tempus historiam contexere posset.

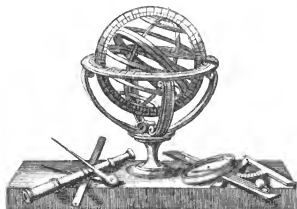


OBSERVATIONES
MERIDIANÆ SOLIS

Habita ad gnomonem Bononiensem
IN ÆDE DIVI PETRONII

Ex anno MDCLV

In annum MDCCXXXV.



*Qui hisce observationibus ad inveniendos Solares calculos uti voluerit
consultas qua de instrumenti statu, ac correctionibus identidem
illi adhibendis capite XII diximus.*

*De latitudine vero Bononia ad Divi Petronii ea perpendas
qua capite XVI, de obliquitate ecliptica qua capite
XV tradidimus.*



1655		Tangen tes corre ctæ a pe numbra	Dist. a vertice apparens limborum		Dist. a vertice vera lim borum		Diam. app. Solis		Dist. a vertice vera cen tri	
			G	I II	G	I II	I II		G	I II
Jun. 21	Ricciolius Astron. ref. lib. 1. cap. 3. Consentit Mezzavacca ephem. tom. 1. pag. 69, & Men golus de refract. pag. 19, & seq. Cassinus vero in specimine observat. pag. 3 ait observatam sibi hoc die distantiam centri Solis a vertice in D. Petronii ab altitudine pedum 71, ac in ventam grad. 20. 59. 50 (visam nempe, necdum a refractione & parallaxi correctam) quod ab hisce numeris discrepat sec. 14. Sed nimirum per id tem poris nondum Cassinus me ridianam lineam marmoribus constraverat, quæ postquam adjecit, ac gnomoni supre mam manum imposuit, obser vationem hanc corrigendam agnovit, quemadmodum ca pite septimo monui mus	38909 37870	21.15.38 20.44.30	21.15.57 20.44.49	31. 8	21. 0.23				
Jun. 22	Ricciol. eodem loco. Men golus de refract. pag. 19	38911 37871	21.15.42 20.44.32	21.16. 1 20.44.51	31.10	21. 0.26				
Jul. 26	Ricciol. ibidem. Cassinus vero in specimine ait observa tum sibi quotidie Solem ex die 25 ad 30 Julii, sed obser vationes dierum 25, 27, & 28 nuspian reperi	47197 46095	25.15.57 24.44.50	25.16.20 24.45.13	31. 7	25. 0.47				
Jul. 29	Ricciol. ibidem	48671 47558	25.57.10 25.26. 5	25.57.34 25.26.28	31. 6	25.42. 1				
Jul. 30	Ricciol. ib.	49187 48070	26.11.28 25.40.25	26.11.52 25.40.49	31. 3	25.56.21				

		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparentis limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G I II	G I II	G I II	G I II	G I II
1655						
Aug. 31	Cassinus in specimine pag. 22. Ricciol. Astr. ref. lib. 1. cap. 3	72909 71521	36. 5.44 35.34.22	36. 6.21 35.34.58	31.23	35.50.39
Sept. 15	Ricciol. eodem loco, ubi dubiam vocat observationem	89167 87554	41.43.21 41.12.13	41.44. 8 41.12.59	31. 9	41.28.33
Sept. 22	Ricciol. astr. ref. lib. 1. cap. 5 num. 13. Consentit Mengol. in anno pag. 272. Mendum ergo irrepsit lib. 1. cap. 3 a stron. ref., ubi tangens limbi sup. correctæ a penumbra paul lo aliter configuatur, nimi rum 96344	98133 96334	44.27.37 43.55.49	44.28.28 43.56.40	31.48	44.12.34
Sept. 23	Ricciol. ib. Mengolus in anno pag. 272	99483 97672	44.51. 5 44.19.31	44.51.57 44.20.22	31.35	44.36. 9
Sept. 24	Ricciol. ib.	100853 99016	45.14.36 44.43. 0	45.15.28 44.43.52	31.36	44.59.40
1656						
Jan. 1	Ex literis Maraldi. Consen tit Ricciol. astron. ref. lib. 1. cap. 3, & Cassinus in epistola ad finem ephemerid. Monta narii 1666	244590 238210	67.45.47 67.13.39	67.48. 1 67.15.49	32.12	67.31.55
Jan. 2	Ex literis Maraldi. Cassinus ib. Ricciol. ib. Subdens minu certa	243520 237200	67.40.29 67. 8.26	67.42.43 67.10.36	32. 7	67.26.40
Jan. 3	ex literis Maraldi	242410 236090	67.34.58 67. 2.39	67.37.13 67. 4.48	32.25	67.21. 0
Jan. 4	ibid.	241160 234910	67.28.41 66.56.27	67.30.53 66.58.35	32.18	67.14.49

Jan.

1656		Tangen- tes cor- re- ctæ a pe- nombra	Diff. a vertice apparentis limborum	Diff. a vertice verali im- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	II	I	II
Jan. 5	Ex literis Maraldi. Cassin. ib. Ricciol. ib. ubi addit <i>cer- tor sed non certa</i>	239800 233740	67.21.48 66.50.15	67.23.59 66.52.23	31.36	67. 8.11
Jan. 6	Ex literis Maraldi	238525 232365	67.15.16 66.42.54	67.17.26 66.45. 1	32.25	67. 1.13
Jan. 9	Ricciol. ib. subdens <i>lubrica</i> . Consentit Cassin. ib. In lite- ris autem Maraldi tangentes a penumbra correctæ 232320, & 226455, quæ nimis ab hi- sce discrepant. Fortasse ergo ad alium diem attinent	233900 228100	66.51. 6 66.19.38	66.53.13 66.21.42	31.31	66.37.28
Jan. 15	Ricciol. ib.	223270 217790	65.52.28 65.20.15	65.54.25 65.22.14	32.11	65.38.20
Jan. 17	Ex literis Maraldi	219330 214037	65.29.24 64.57.24	65.31.24 64.59.20	32. 4	65.15.22
Jan. 21		211065 206090	64.38.57 64. 6.58	64.40.50 64. 8.49	32. 1	64.20.50
Jan. 22		208925 204050	64.25.20 63.53.30	64.27.13 63.55.20	31.53	64.11.17
Jan. 28		195760 191340	62.56.28 62.24.26	62.58.13 62.26. 9	32. 4	62.42.11
Jan. 30		191238 187030	62.23.58 61.52. 4	62.25.41 61.53.45	31.56	62. 9.43
Jan. 31		189065 184900	62. 7.29 61.35.38	62. 9.11 61.37.18	31.53	61.53.15
Febr. 1		186840 182755	61.50.37 61.18.39	61.52.19 61.20.19	32. 0	61.36.19
Febr. 2		184600 180575	61.33.18 61. 1.22	61.34.58 61. 3. 0	32.58	61.18.59
Febr. 7		173550 169882	60. 2.57 59.31. 3	60. 4.31 59.32.35	31.56	59.48.33

1656		Tangen tes corre ctæ a pe nombra	Diff. a vertice apparens limborum			Diff. a vertice vera lim borum			Diam. app. Solis	Diff. a vertice vera cen tri		
			G	I	II	G	I	II	I II	G	I	II
Febr. 9	Extant in literis Maraldi tangentes limborum Lunę hac noctę observatę, necdum, ut arbitror, a penumbra corre ctę, 59874, 58471											
Feb. 16	ex iisdem literis	154505 151333	57. 5.17 56.32.37			57. 6.39 56.33.57			32.42	56.50.18		
Feb. 18	ex iisdem; verum observa tio aut vitio est habita, aut ad hunc diem non attinet	146370 143400	55.39.31 55. 6.36			55.40.50 55. 7.51			32.59	55.24.20		
Feb. 21	ex iisdem dubia; sed pro culdubio in hunc diem non convenit	140450 138625										
Feb. 22	ex iisdem exacta	142506 139733	54.56.30 54.24.38			54.57.45 54.25.51			31.54	54.41.48		
Feb. 23	ex iisdem	140570 137875	54.34.21 54. 2.49			54.35.35 54. 4. 1			31.34	54.19.48		
Mar. 14		106861 104915	46.53.59 46.22.27			46.54.55 46.23.22			31.33	46.39. 9		
Mar. 15		105410 103480	46.30.31 45.58.47			46.31.26 45.59.41			31.45	46.15.33		
Mar. 16		103960 102060	46. 6.44 45.35. 3			46. 7.38 45.35.56			31.42	45.51.47		
Mar. 19	Cassin. in specim. p.5. Ricciol. astr. ref. lib. 1. cap. 3. Mengol. in anno p. 272	99762 97940	44.55.54 44.24.14			44.56.46 44.25. 5			31.41	44.40.55		
Mar. 20	Cassin. in specim. p.6. Men gol. in anno p. 272	98180 96600	44.31.56 44. 0.33			44.32.47 44. 1.24			31.23	44.17. 5		
Mar. 21	Cassin. ibidem. Ricciol. astron. lib. 1. cap. 2	97048 95275	44. 8.30 43.36.50			44. 9.21 43.37.44			31.37	43.55.32		

Mar.

		Tangen- tes cor- re- ctæ a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G 1 1'	G 1 1'	1 1'	G 1 1'
1656						
Mar. 22	Cassin. in specimine pag. 7	95712 93981	43.44.42 43.13.22	43.45.32 43.14.11	31.21	43.29.52
Mar. 23	Cassin. in specim. pag. 8. Ricciol. Astron. lib. 1. cap. 3	94407 92683	43.21. 8 42.49.32	43.21.57 42.50.19	31.38	43. 6. 8
Apr. 21	Cassin. in spec. pag. 22. Ric- ciol. astron. lib. 1. cap. 3	72921 71529	36. 6. 0 35.34.33	36. 6.37 35.35. 9	31.28	35.50.53
Jun. 21	Cassinus ad finem ephem. Malvasiæ distantiam centri Solis a vertice hoc die sibi observatam memorat gr. 21.0 4, quæ a refractione castiga- ta est gr. 21.0.23. Tangentes unde eam supputavit nus- piam reperi					21. 0.23
Jul. 23	Ricciol. astron. ref. lib. 1. c. 3	46192 45098	24.47.36 24.16.27	24.47.59 24.16.47	31.12	24.32.23
Aug. 8	Ricciol. ib.	54944 53770	28.47.10 28.16. 2	28.47.38 28.16.29	31. 9	28.32. 4
Aug. 9		55605 54426	29. 4.35 28.33.27	29. 5. 3 28.33.55	31. 8	28.49.29
Aug. 20		63775 62513	32.31.40 32. 0.39	32.32.12 32. 1.11	31. 1	32.16.42
Sept. 22		99150 97335	44.44.59 44.13.35	44.45.50 44.14.26	31.24	44.30. 8
Sept. 23		100495 98670	45. 8.29 44.36.59	45. 9.21 44.37.50	31.31	44.53.35
Sept. 24		101872 100020	45.32.53 45. 0.21	45.32.46 45. 1.13	31.33	45.16.59
Sept. 29		109080 107090	47.29.12 46.57.39	47.30. 9 46.58.35	31.34	47.14.22

		Eangen tes corre ctæ a pe numbra	Diff. a vertice apparentis limborum			Diff. a vertice vera lim berum			Diam. app. Solis			Diff. a vertice vera cen tri		
			G	I	II	G	I	II	I	II		G	I	II
1656														
Oct. 15	Ex literis Maraldi. Con sentit Ricciol. astron. ref. lib. 1. cap. 3.	135641 133041	53.36.3			53.37.14 53. 5.21			31.53			53.21.17		
Oct. 16	ex literis Maraldi	137440 134900	53.57.39 53.27.3			53.58.51 53.28.14			30.37			53.43.33		
Oct. 17	ex iisdem	139351 136660	54.20.11 53.48.20			54.21.24 53.49.32			31.52			54. 5.28		
Oct. 19		143130 140350	55. 3.34 54.31.48			55. 4.49 54.33. 1			31.48			54.48.55		
Oct. 20		145040 142233	55.24.54 54.53.24			55.26.11 54.54.39			31.32			55.10.25		
Oct. 26		157060 153900	57.30.55 56.59. 7			57.32.19 57. 0.29			31.50			57.16.24		
Oct. 27		159070 155910	57.50.40 57.19.26			57.52. 5 57.20.49			31.16			57.36.27		
Nov. 10		189490 185310	62.10.41 61.38.49			62.12.22 61.40.29			31.53			61.56.25		
Nov. 11	ex iisdem, consentiente Ricciolio astron. lib. 1. cap. 3	191670 187430	62.26.51 61.55. 7			62.28.35 61.56.49			31.46			62.12.42		
Nov. 20	ex literis Maraldi	211355 206350	64.40.46 64. 8.40			64.42.41 64.10.32			32. 9			64.26.36		
Nov. 23	ex iisdem. Consentit Ric ciol. loco memorato	217530 212300	65.18.41 64.46.41			65.20.40 64.48.36			32. 4			65. 4.38		
Nov. 27	ex iisdem literis	225390 219830	66. 4.27 65.32.22			66. 6.30 65.34.22			32. 8			65.50.26		
Nov. 28		227230 221600	66.14.48 65.42.44			66.16.52 65.44.45			32. 7			66. 0.48		
Dec. 3		235600 229670	67. 0. 5 66.28.17			67. 2.14 66.30.23			31.51			66.46.19		

Drs.

		Tangen tes corre ctæ ap- numbra	Diff. a vertice apparent limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I I	G I II	I II	G I II
1656						
Dec. 7	Ex literis Maraldi.	241230 235000	67.29. 2 66.56.53	67.31.14 66.59. 3	32.11	67.15. 8
Dec. 12		246420 239990	67.54.44 67.22.45	67.56.59 67.24.56	32. 3	67.40.58
Dec. 13		247245 240740	67.58.43 67.26.34	68. 0.59 67.28.46	32.13	67.44.52
Dec. 14		247910 241380	68. 1.56 67.29.48	68. 4.12 67.32. 0	32.12	67.48. 6
Dec. 21	Cassinus ad finem Ephe- meridum Malvasiæ. Consen- tiunt literæ Maraldi, Mezza- vacca Ephem.tomo p.pag.70 Ricciol. Astr. reform. lib. 1. cap. 3, & Mengol. de re- fract. pag. 19, & seqq.	250050 243440	68.12. 9 67.40. 5	68.14.26 67.42.19	32. 7	67.58.22
Dec. 24	Ex literis Maraldi.	249430 242870	68. 9.13 67.37.15	68.11.30 67.39.28	32. 2	67.55.29
Dec. 25	Ex iisdem.	249040 242490	68. 7.21 67.35.22	68. 9.37 67.37.34	32. 3	67.53.35
Dec. 26		248540 242030	68. 4.57 67.33. 3	68. 7.13 67.35.15	31.58	67.51.14
1657						
Jan. 10	Ex literis Maraldi. Con- sentit Ricciol. Astr.ref. lib.1. cap. 3.	230966 225185	66.35.21 66. 3.19	66.37.27 66. 5.22	32. 5	66.21.24
Jan. 11	Ex iisdem literis.	229220 223500	66.25.49 65.53.42	66.27.54 65.55.44	32.10	66.11.49
Jan. 12		227430 221770	66.15.54 65.43.43	66.17.58 65.45.44	32.14	66. 1.51
Jan. 13		225575 220010	66. 5.30 65.33.25	66. 7.33 65.35. 0	32.33	65.51.16

O

Jan.

		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparenti limborum			Diff. a vertice vera lim borum			Diam. app. Solis	Diff. a vertice vera cen tri		
			G	I	II	G	I	II	I II	G	I	II
1657												
Jan. 19	ex literis Maraldi	213600 208510	64.54.45 64.22.41			64.56.41 64.24.34			32. 7	64.40.38		
Jan. 21		209350 204470	64.28. 3 63.56.17			64.29.57 63.58. 7			31.50	64.24. 2		
Jan. 24		202840 198170	64.43.24 63.13.25			63.47.24 63.15.22			32. 2	63.31.23		
Jan. 28		194000 189670	62.43.50 62.12. 1			62.45.35 6. 13.44			31.51	62.29.40		
Jan. 29	Ex iisdem literis. Consen tit Ricciol. Astr. ref. lib. 1. c. 3	191790 187510	62.27.44 61.55.43			62.29.28 61.57.24			32. 4	62.23.26		
Feb. 5	ex iisdem literis	176240 172465	60.25.45 59.53.37			60.27.21 59.55.10			32.21	60.11.25		
Feb. 10	Ex iisdem. Ricciol. loco præd.	165380 161950	58.50.24 58.18.21			58.51.53 58.19.48			32. 5	58.35.50		
Feb. 11	ex iisdem literis	163250 159680	58.30.36 57.36.35			58.32. 4 57.58. 1			34. 3			
Feb. 13		159030 155820	57.50.16 57.18.32			57.51.41 57.19.55			31.46	57.35.48		
Feb. 19		146850 143960	55.44.47 55.12.53			55.46. 5 55.14. 9			31.54	55.30. 6		
Feb. 28		129950 127490	52.25.25 51.53.25			52.26.23 51.54.31			31.52	52.10.27		
Mar. 16	Ex iisdem. Ricciol. loco præd.	104275 102370	46.11.56 45.40.25			46.12.50 45.41. 8			31.42	45.56.59		
Mar. 18	Ex iisdem literis	101430 99590	45.24.24 44.52.56			45.25.16 44.53.47			31.29	45. 9.32		
Mar. 19	Ex iisdem. Ricciol. eod. loco	100050 98220	45. 0.52 44.29. 7			45. 1.44 44.29.58			31.46	44.45.51		
Mar. 26	ex literis Maraldi	90850 89220	42.15.18 41.44.22			42.16. 5 41.45. 9			30.56	42. 0.37		

Mar.

		<i>Tangen tes cor- rectæ a pe- nombra</i>	<i>Diff. a vertice apparens limborum</i>	<i>Diff. a vertice vera lim- borum</i>	<i>Diam. app. Solis</i>	<i>Diff. a vertice vera cen- tri</i>
1657			G 1 "	G 1 "	1 "	G 1 "
Mar. 28	ex iisdem literis, & Ricciol. loco prædicto	88420 86805	41.28.59 40.57.34	41.29.46 40.58.20	31.26	41.14.3
1658						
Mar. 20	Ricciol. Astron. ref. lib. 1. cap. 8. Ex literis autem Ma- raldi colliguntur tangentes hujus diei correctæ a Penum- bra 99125, & 97213, e qui- bus eadem altitudo centri Solis elicetur atque ex Ric- ciolianis, sed diameter Solis prodit justo major; nempe ob correctionem tangentium contrario ac debuit modo ad- hibitam	99075 97263	44.44.2 44.12.18	44.44.54 44.13.9	31.45	44.29.2
Apr. 2	Ex Maraldi literis	82860 81350	39.38.43 39.7.43	39.39.26 39.8.26	31.0	39.23.56
Apr. 3	ex iisdem	81745 80240	39.15.51 38.44.37	39.16.34 38.45.19	31.25	39.0.57
Apr. 4	ex iisdem, & Ricciol. loco prædicto	80640 79140	38.52.58 38.21.29	38.53.41 38.22.11	31.30	38.37.56
Apr. 5	ex iisdem literis	79562 78090	38.30.23 37.59.10	38.31.5 37.59.51	31.14	38.15.28
Apr. 12		72400 71050	35.54.16 35.23.38	35.54.52 35.24.13	30.39	35.39.33
Apr. 13		71438 70070	35.32.29 35.1.8	35.33.5 35.1.4	11.22	35.17.24
Apr. 14		70450 69150	35.9.53 34.39.50	35.10.28 34.40.25	30.3	34.55.27
Apr. 15		69580 68220	34.49.49 34.18.7	34.50.24 34.18.42	31.42	34.34.33

O 2

April.

1658		Tangen tes corve Hæ a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
Apr. 23	Hæc observatio configura tur a Maraldo d. 22, vere ta men ad d. 23 spectat	62680 61410	32. 4.46 31.33.15	32. 5.18 31.33.46	31.32	31.49.32
Apr. 24	Hæc etiam observatio uno die in Maraldi literis præpo nitur	61873 60630	31.44.46 31.13.42	31.45.17 31.14.12	31. 5	31.29.45
Apr. 26		60300 59090	31. 5.25 30.34.40	31. 5.55 30.35.10	30.45	30.50.33
Maj. 2		55990 54770	29.14.41 28.42.35	29.15. 9 28.43. 3	32. 6	28.59. 6
Maj. 22		45080 44000	24.15.57 23.44.59	24.16.19 23.45.20	30.59	24. 0.50
Jun. 20	Ricciol. Astron. ref. lib. 1 cap. 3 Ex Cassini scbede. Men gol. de refract. pag. 19, & seq.	38912 37876	21.15.44 20.44.41	21.16. 3 20.45. 0	31. 3	21. 0.32
Jun. 21	Ricciol. eodem loco. Sed Mengolus habet 38909, & 37868, & Mezzavacca tomo 1 Ephem. pag. 70 ab utroque discrepans 38906, & 37868	38911 37871	21.15.42 20.44.32	21.16. 1 20.44.51	31.10	21. 0.26
Dec. 18	ex literis Maraldi	249540 242960	68. 9.44 67.37.42	68.12. 1 67.39.54	32. 7	67.55.58
Dec. 19	ex iisdem	249790 243200	68.10.55 67.38.54	68.13.12 67.41. 7	32. 5	67.57.10
Dec. 20		249950 243350	68.11.41 67.39.39	68.13.58 67.41.53	32. 5	67.57.56
Dec. 21		250020 243405	68.12. 1 67.39.55	68.14.18 67.42. 9	32. 9	67.58.13

Jan.

		Tangen tes corre ctæ a pe numbra	Dist. a vertice apparens limborum	Dist. a vertice vera lim borum	Diam. app. Solis	Dist. a vertice vera cen tri
		G ° ' "	G ° ' "	G ° ' "	I ° ' "	G ° ' "
1659						
Jan. 6	Ex Maraldi literis	237970 231940	67.12.25 66.40.31	67.14.35 66.42.38	31.57	66.58.36
Jan. 12	ex iisdem	228295 222602	66.20.42 65.48.31	66.22.47 65.50.33	32.14	66. 6.40
Jan. 15		222650 217225	65.48.49 65.16.51	65.50.51 65.18.49	32. 2	65.34.50
Jan. 16		220725 215340	65.37.37 65. 5.26	65.39.37 65. 7.23	32.14	65.23.30
Jan. 19	ex iisdem literis. Consen tit Ricciol. Astron. ref. lib. 1 c. 3 Cassin. in epist. ad finem ephem. Montanar. 1666	214580 209460	65. 0.47 64.28.45	65. 2.44 64.30.39	32. 5	64.46.41
Jan. 21	ex iisdem literis	210390 205450	64.34.40 64. 2.46	64.36.34 64. 4.37	31.57	64.20.36
Jan. 23		206090 201300	64. 6.57 63.34.59	64. 8.48 63.36.48	32. 0	63.52.48
Jan. 25		201700 196840	63.37.42 63. 4. 5	63.39.31 63. 5.51	33.40	
Jan. 27		197290 192800	63. 7.16 62.35. 8	63. 9. 2 62.36.52	32.10	62.52.57
Jan. 28		195060 190700	62.51.27 62.19.42	62.53.12 62.21.25	31.47	62.37.19
Jan. 29		192850 188540	62.35.30 62. 3.32	62.37.14 62. 5.14	32. 0	62.21.14
Jan. 30		190610 186365	62.19. 1 61.46.58	62.20.44 61.48.39	32. 5	62. 4.42
Jan. 31		188370 184235	62. 2.15 61.30.27	62. 3.57 61.32. 7	31.50	61.48. 2
Febr. 1		186120 182060	61.45. 5 61.13.17	61.46.46 61.14.56	31.50	61.30.51

Febr.

1659		Tangen- tes corre- ctæ a pe- numbra	Diff. a vertice apparent limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G 1 11	G 1 11	G 1 11	G 1 11	G 1 11
Feb. 6	ex literis Maraldi	175080 171350	60.15.59 59.43.56	60.17.34 59.45.29	52. 5	60. 1.31
Feb. 8	ex iisdem literis. Et Ric- ciol. eodem loco	170710 167150	59.38.19 59. 6.34	59.39.51 59. 8. 4	31.47	59.23.57
Feb. 16	ex iisdem literis	153825 150750	56.58.21 56.26.30	56.59.42 56.27.50	31.52	56.43.46
Feb. 17		151800 148780	56.37.29 56. 5.31	56.38.49 56. 6.50	31.59	56.22.49
Feb. 18		149790 146820	56.16.22 55.44.27	56.17.41 55.45.45	31.56	56. 1.43
Feb. 28		130810 128335	52.36.12 52. 4.26	52.37.20 52. 5.33	31.47	52.21.27
Mar. 1		129020 126600	52.13.18 51.41.43	52.14.25 51.42.50	31.35	51.58.38
Mar. 4		123830 121520	51. 4.37 50.32.55	51. 5.41 50.33.59	31.42	50.49.50
Mar. 7		118830 116625	49.55. 5 49.23.19	49.56. 7 49.24.20	31.47	49.40.13
Mar. 8		117200 115030	49.31.40 48.59.54	49.32.41 48. 0.54	31.47	49.16.47
Mar. 9		115600 113470	49. 8.19 48.56.38	49. 9.19 48.37.57	31.42	48.53.28
Mar. 12		110920 108880	47.57.50 47.26. 4	47.58.47 47.27. 1	31.46	47.42.54
Mar. 28	ex literis Maraldi	89010 87370	41.40.20 41. 8.38	41.41. 7 41. 9.24	31.43	41.25.15
Mar. 29	ex iisdem, & Ricciol. A- stron. ref. lib. 1 cap. 3	87800 86185	41.16.59 40.45.23	41.17.45 40.46. 8	31.37	41. 1.56
April. 1	ex iisdem literis	84275 82730	40. 7.21 39.36. 4	40. 8. 5 39.36.47	31.18	39.52.26

Maj.

		Tangen- tes cor- re- ctæ a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G ° '	G ° '	° '	G ° '
1659						
Maj. 15	ex iisdem, & Ricciol. eo dem loco	48420 47300	25.50.19 25.18.51	25.50.34 25.19.14	31.20	25.34.54
Maj. 23	ex iisdem literis	44795 43695	24. 7.48 23.36.10	24. 8.10 23.36.31	31.39	23.52.20
Maj. 24		44400 43300	23.56.28 23.24.46	23.56.50 23.25. 7	31.43	23.40.58
Jun. 3		41200 40140	22.23.30 21.52.14	22.23.50 21.52.33	31.17	22. 8.12
Jun. 4		40945 39905	22.16. 0 21.45.16	22.16.20 21.45.35	30.45	22. 0.58
Jun. 6		40460 39470	22. 1.42 21.32.21	22. 2. 2 21.32.40	29.22	21.47.21
Jun. 28		39230 38200	21.25.12 20.54.25	21.25.31 20.54.42	30.48	21.10. 7
Jul. 3		39870 38837	21.44.14 21.13.29	21.44.33 21.13.48	30.45	21.29.11
Jul. 4		40039 39007	21.49.14 21.18.34	21.49.33 21.18.53	30.40	21.34.13
Jul. 7		40630 39590	22. 6.42 21.35.55	22. 7. 2 21.36.14	30.48	21.51.38
Jul. 8		40860 39810	22.13.30 21.42.26	22.13.50 21.42.45	31. 5	21.58.17
Jul. 9		41080 40050	22.19.58 21.49.34	22.20.18 21.49.53	30.25	22. 5. 6
Jul. 10		41350 40300	22.27.55 21.56.58	22.28.15 21.57.17	30.58	22.12.46
Jul. 15		42800 41740	23.10.15 22.39.21	23.10.36 22.39.41	30.55	22.55. 8
Jul. 18		43850 42785	23.40.39 23. 9.49	23.41. 0 23.10.10	30.50	23.25.35

Aug.

1659		Tangen- tes cor- re- ctæ a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
Aug. 6	ex iisdem literis	53193 52050	28. 0.36 27.29.49	28. 1. 3 27.30.15	30.48	27.45.39
Aug. 8		54465 53290	28.34.30 28. 3.11	28.34.58 28. 3.38	31.20	28.19.28
Aug. 11		56450 55270	29.26.41 28.55.46	29.27. 9 28.56.14	30.55	29.11.43
Aug. 14	ex iisdem literis. Ricciolius autem Astron. lib. 1 cap. 3 tan- gentem limbi inferioris con- signat 58620, excessu partium 50; itaque ut apparet corre- ctionem a penumbra hic præ- termisit. De superiori limbo cum Maraldo consentit	58570 57350	30.21.28 29.50. 3	30.21.57 29.50.31	31.26	30. 6.14
Aug. 16	ex iisdem literis	60045 58830	30.58.58 30.28. 6	30.59.28 30.28.35	30.53	30.44. 2
Aug. 18		61580 60340	31.37.28 31. 6.24	31.37.59 31. 6.54	31. 5	31.22.26
Aug. 23		65650 64370	33.17. 6 32.46.10	33.17.39 32.46.42	30.57	33. 2.10
Aug. 25		67390 66075	33.58.33 33.27.17	33.59. 7 33.27.50	31.11	33.43.25
Aug. 30		71970 70570	35.44.33 35.12.38	35.45. 9 35.13.11	31.56	35.29.11
Sept. 8	ex iisdem, ubi hæc obser- vatio notatur die 9, vere ta- men ad diem 8 pertinet	81170 79660	39. 3.59 38.32.27	39. 4.42 38.33. 9	31.33	38.48.55
Nov. 29	ex iisdem literis	227685 222033	66.17.20 65.45.14	66.19.24 65.47.15	32. 9	66. 3.19
Nov. 30		229450 223733	66.27. 9 65.55. 2	66.29. 9 65.57. 4	32. 5	66.13. 7

Des.

1659		Tangen- tes corre- ctæ ap- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	II	G	II	G
Dec. 1	ex iisdem literis	231170 225322	66.36.27 66. 4.25	66.38.33 66. 6.28	32. 5	66.22.31
Dec. 2		232870 227014	66.45.36 66.13.35	66.47.43 66.25.39	32. 4	66.31.41
Dec. 3		234470 228530	66.54. 7 66.22. 1	66.56.15 66.24. 6	32. 9	66.40.10
Dec. 4		236019 230025	67. 2.16 66.30.17	67. 4.25 66.32.23	32. 2	66.48.24
Dec. 7		240250 234050	67.24. 5 66.51.54	67.26.16 66.54. 2	32.14	67.10. 9
Dec. 8		241535 235300	67.30.34 66.58.30	67.32.46 67. 0.39	32. 7	67.16.42
Dec. 9		242740 236430	67.36.36 67. 4.25	67.38.49 67. 6.34	32.15	67.22.41
Dec. 18		249470 242870	68. 9.24 67.37.15	68.11.41 67.39.28	32.13	67.55.35
Dec. 20		249915 243300	68.11.31 57.39.24	68.13.48 67.41.38	32.10	67.57.43
1660						
Oct. 9	ex iisdem Maraldi literis	125103 122740	51.21.48 50.49.45	51.22.53 50.50.49	32. 4	51. 6.51
Oct. 11		128530 126556	52. 6.58 51.41. 8	52. 8. 5 51.42.14	25.51	
Oct. 12		130265 127830	52.29.16 51.57.51	52.30.24 51.58.58	31.26	52.14.41
Oct. 14		133852 131550	53.14.13 52.45.33	53.15.23 52.46.42	28.41	
Oct. 16		136522 134885	53.46.40 53.26.52	53.47.51 53.28. 2	19.49	

P

Oct.

1660		Tangen- tes cor- re de a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G 1 11	G 1 11	1 11	G 1 11
Oct. 25	ex iisdem literis	155039 151965	57.10.53 56.39.12	57.12.15 56.40.33	31.42	56.56.24
Nov. 10		189489 185300	62.10.40 61.38.45	62.12.22 61.40.25	31.57	61.56.23
Nov. 12		193950 189610	62.43.28 62.11.34	62.45.13 62.13.16	31.57	62.29.14
Nov. 13		196130 191730	62.59. 4 62.27.18	63. 0.50 62.29. 1	31.49	62.44.56
Nov. 14	Ex literis Maraldi. Con- sentit Riccioli. Astr. ref. lib. 1 cap. 3	198350 193860	63.14.41 62.42.49	63.16.28 62.44.34	31.54	63. 0.31
Nov. 15	ex iisdem literis	200540 195990	63.29.48 62.58. 5	63.31.36 62.59.51	31.45	63.15.43
Nov. 17		204915 200170	63.59.14 63.27.17	64. 1. 5 63.29. 5	32. 0	63.45. 5
Nov. 18		207035 202250	64.13.16 63.41.26	64.15. 8 63.43.15	31.53	63.59.11
Nov. 19		209210 204330	64.27.10 63.55.22	64.29. 3 63.57.12	31.51	64.13. 7
Nov. 20		211315 206370	64.40.21 64. 8.48	64.42.26 64.10.40	31.46	64.26.33
Nov. 24		219545 214241	65.30.42 64.58.43	65.32.42 65. 0.30	32.12	65.16.36
Nov. 27		225280 219800	66. 3.50 65.32.11	66. 5.52 65.34.11	31.42	65.50. 2
Nov. 30		230771 225005	66.34.17 66. 2.17	66.36.23 66. 4.20	32. 3	66.20.21
Dec. 1		232425 226594	66.43.13 66.11.14	66.45.20 66.13.18	32. 2	66.29.19
Dec. 3		235598 229640	67. 0. 4 66.28. 7	67. 2.13 66.20.12	32. 0	66.46.13

Dec.

1660		Tangen tes corre di & a pe numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G	I	II	I	II
Dec. 9	ex iisdem literis	243547 237185	67.40.37 67. 8.21	67.42.50 67.10.31	32.19	67.26.40
Dec. 10		244570 238170	67.45.41 67.13.26	67.47.54 67.15.36	32.18	67.31.45
Dec. 11		245565 239100	67.50.34 67.18.13	67.52.48 67.20.24	32.24	67.36.36
Dec. 14	Huic, & sequenti observa tioni in Maraldi literis dies adscriptus non erat, sed ex reliquarum serie, & ex com putatione longitudinis Solis compertum habeo pertinere ad dies 14, & 15	247830 241320	68. 1.33 67.29.29	68. 3.49 67.31.41	32. 8	67.47.45
Dec. 15		248465 241900	68. 4.36 67.32.24	68. 6.52 67.34.37	32.15	67.50.44
Dec. 20	ex iisdem literis	249975 243340	68.11.48 67.39.36	68.14. 5 67.41.50	32.15	67.57.57
Dec. 21	ex iisdem, eratque adscri ptum <i>Sol trepidus</i>	249975 243340	68.11.48 67.39.36	68.14. 5 67.41.50	32.15	67.57.57
Dec. 30	ex iisdem	245590 239165	67.40.41 67.18.33	67.52.55 67.20.44	32.11	67.36.49
1661						
Jan. 18	Ricciol. Astron. ref. lib. 1 cap. 3	255512 250420	65. 6.51 64.34.52	65. 8.48 64.36.46	32. 2	64.52.47
Jan. 24	Ricciol. eodem loco ubi perperam hanc observatio nem consignat die 19 cum ad diem 24 pertineat	201770 198110	63.44.56 63.13. 0	63.46.46 63.14.47	31.59	63.30.46

		Tangen tes corre cte a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G	I	II	I	II
1663						
Jun. 20	Ex literis Maraldi, adjectis observatorum nominibus <i>Comes Zani, & Montanarius</i>	38920 37888	21.15.58 20.45.2	21.16.17 20.45.21	30.56	21. 0.49
Jun. 21	Ex iisdem. <i>Marchio Mal vafis, Comes Zani, & Monta narius</i>	38915 37878	21.15.49 20.44.44	21.16. 8 20.45. 3	31. 5	21. 0.36
Jun. 22	Ex literis Maraldi. obser vatores iisdem	38915 37878	21.15.49 20.44.44	21.16. 8 20.45. 3	31. 5	21. 0.36
Jun. 23	Ex iisdem. observatores iisdem	38920 37906	21.15.58 20.45.24	21.16.17 20.45.43	30.34	21. 1. 0
Dec. 21	Mezzavacca Ephem. tomo p. pag. 71. Consentiit Men gol. de refr. pag. 19	249970 243357	68.11.46 67.39.41	68.14. 3 67.41.55	32. 8	67.57.59
Dec. 22	Mengol. de refract. pag. 19	249950 243328	68.11.41 67.39.32	68.13.58 67.41.46	32.12	67.57.52
1665						
Jun. 21	Mezzavacca Ephem. tomo p. pag. 70. Mengol. de refr. pag. 19	38905 37869	21.15.31 20.44.28	21.15.50 20.44.47	31. 3	21. 0.18
1666						
Jan. 7	ex literis Maraldi	236072 230085	67. 2.33 66.30.33	67. 4.42 66.32.39	32. 3	66.48.40
Jan. 8	ex iisdem	234516 228585	66.54.20 66.22.19	66.56.28 66.24.24	32. 4	66.40.26
Jan. 9		232920 227069	66.45.53 66.13.54	66.48. 0 66.15.58	32. 2	66.31.59
Jan. 11		229511 223796	66.27.24 65.55.24	66.29.30 65.57.27	32. 3	66.13.28

Jan.

1666		Tangen- tes cor- dæ a pe- numbra	Diff. a vertice apparent limborum	Diff. a vertice verali limborum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G. 1 11	G. 1 11	1 11	G. 1 11
Jan. 13	Ex Maraldi literis	125895 120318	66. 7.19 65.35.14	66. 9.23 65.37.15	32. 8	65.53.19
Jan. 14	ex iisdem	123978 118475	65.56.26 65.24.20	65.58.29 65.26.19	32.10	65.42.24
Jan. 17		118090 112852	65.22. 2 64.50. 7	65.24.21 64.52. 3	32.18	65. 2.12
Jan. 19		113978 108852	64.57. 6 64.24.52	64.59. 2 64.26.45	32.17	64.42.53
Jan. 20		111846 106871	64.43.51 64.12. 4	64.45.46 64.13.56	31.50	64.29.51
Jan. 21		109720 104825	64.30.25 63.58.39	64.32.16 64. 0.30	31.46	64.16.23
Mar. 1		1128498 1126090	52. 6.33 51.34.58	52. 7.40 51.36. 4	31.36	51.51.52
Mar. 2		1126766 1124378	51.43.54 51.12. 2	51.45. 0 51.13. 7	31.53	51.29. 3
Mar. 3		1125042 1122703	51.20.58 50.49.15	51.22. 3 50.50.19	31.44	51. 6.11
Mar. 4		1123327 1121030	50.57.47 50.26. 6	50.58.51 50.27. 9	31.42	50.43. 0
Mar. 5		1121650 1119370	50.34.43 50. 2.46	50.35.47 50. 3.39	32. 8	50.19.43
Mar. 6		1120585 1117749	50.19.53 49.39.36	50.20.56 49.40.38	40.18	
Mar. 8		1116734 1114565	49.24.54 48.53. 0	49.25.55 48.54. 0	31.55	49. 9.57
Mar. 9		1115125 1113017	49. 1.19 48.29.49	49. 2.19 48.30.48	31.31	48.46.34
Mar. 11		1111995 109940	48.14.18 47.42.38	48.15.16 47.43.35	31.41	47.59.26

Mar.

1666		Tangen tes cor- re a pe numbra	Diff.	Diff.	Diam.	Diff.
			a vertice apparens limborum	a vertice vera lim borum	app. Solis	a vertice vera cen- tri
			G I II	G I II	I II	G I II
Mar. 12	ex literis Maraldi	110468 108437	47.50.51 47.19. 5	47.51.48 47.20. 2	31.46	47.35.53
Mar. 13	ex iisdem	108952 106954	47.27.11 46.55.28	47.28. 8 46.56.24	31.44	47.12.16
Mar. 16		104526 102610	46.16. 4 45.44.17	46.16.58 45.45.10	31.48	46. 1. 4
Mar. 17		103085 101224	45.52.13 45.20.55	45.53. 6 45.21.48	31.18	45.37.27
Mar. 18		101681 99835	45.28.39 44.57. 8	45.29.32 44.58. 0	31.32	45.13.46
Mar. 19		100317 98458	45. 5.26 44.33.18	45. 6.18 44.34. 9	32. 9	44.50.13
Mar. 24		93622 91916	43. 6.48 42.35.16	43. 7.37 42.36. 4	31.33	42.51.50
Mar. 25		92375 90665	42.43.49 42.11.51	42.44.37 42.18.38	31.59	42.28.37
Mar. 28		88640 87018	41.33.14 41. 1.45	41.34. 1 41. 2.31	31.30	41.18.16
Mar. 29		87425 85820	41. 9.43 40.38.11	41.10.28 40.38.56	31.32	40.54.42
Apr. 1		83918 82383	40. 0.10 39.28.58	40. 0.54 39.29.41	31.13	39.45.17
Apr. 3		81672 80158	39.14.21 38.42.54	39.15. 4 38.43.36	31.28	38.59.20
Apr. 4		80576 79066	38.51.37 38.19.55	38.52.19 38.20.36	31.43	38.36.27
Apr. 5		79492 78004	38.28.55 37.57.20	38.29.37 37.58. 1	31.36	38.13.49

Apr.

1666		Tangen tes cor re ctæ a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G I II	G I II	I II	I II	G I II
Apr. 6	Nulla huic diei adscripta est observatio in Maraldi li teris; sed hæc nota adjecta: observatio convenit cum calculo. Nimirum per hosce dies Cassinus tangentes limbo rum Solis e suis tabulis sup putabat antequam ad obser vationem accederet, ut ta bularum consensum cum Cæ lo adversus nonnullos de monstraret; de quo extat Cassini epistola ad Montana rum ad calcem ephemeridis sub hoc editæ anno 1666					
Apr. 7	Ex iisdem literis.	77361 75907	37.43.33 37.12. 4	37.44.13 37.12.53	31.20	37.28.33
Jun. 19		38913 37878	21.15.45 20.44.44	21.16. 4 20.45. 3	31. 1	21. 0.33
Sept. 17		92034 90354	42.37.29 42. 5.57	42.38.17 42. 6.44	31.33	42.22.30
Sept. 20		95857 94114	43.47.17 43.15.48	43.48. 7 43.16.37	31.30	43.32.22
Oct. 14		133000 130500	53. 3.40 52.32.15	53. 4.50 52.33.23	31.27	52.49. 7
Oct. 15		134835 132270	53.26.15 52.54.34	53.27.25 52.55.42	31.42	53.11.34
Dec. 18		249600 242970	68.10. 1 67.37.45	68.12.18 67.39.58	32.20	67.56. 8
Dec. 21		249997 243380	68.11.54 67.39.48	68.14.11 67.42. 2	32. 9	67.58. 6
Dec. 25	Mengol. in Anno pag.22	249102 242602	68. 7.39 67.35.55	68. 9.56 67.38. 8	31.48	67.54. 2

Mar.

1667		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparenti limborum			Diff. a vertice vera lim borum			Diam. app. Solis	Diff. a vertice vera cen tri			
			G	I	II	G	I	II	I	II	G	I	II
Mar. 31	ex literis Maraldi	85357 83780	40.28.59 39.57.23			40.29.44 39.58. 7			31.37		40.13.55		
Apr. 1	ex iisdem literis	84197 82650	40. 5.47 39.34.26			40. 6.31 39.35. 9			31.22		39.50.50		
Apr. 4		80840 79327	38.57. 7 38.25.26			38.57.50 38.26. 8			31.42		38.41.59		
Apr. 12		72573 71185	35.58.11 35.26.42			35.58.47 35.27.18			31.29		35.43. 2		
Apr. 13		71612 70235	35.36.26 35. 4.56			35.37. 2 35. 5.31			31.31		35.21.16		
Apr. 14		70676 69300	35.15. 4 34.43.20			35.15.39 34.43.55			31.44		34.59.47		
Apr. 16		68802 67485	34.31.43 34. 0.49			34.32.18 34. 1.24			30.54		34.16.51		
Apr. 28		58946 57740	30.31. 3 30. 0. 8			30.31.32 30. 0.37			30.55		30.16. 5		
Apr. 29		58212 57025	30.12.17 29.41.38			30.12.46 29.42. 6			30.40		29.57.26		
Maj. 1		56782 55610	29.35.20 29. 4.43			29.35.48 29. 5.11			30.37		29.20.29		
Maj. 8		52263 51113	27.35.34 27. 4.23			27.36. 0 27. 4.49			31.11		27.20.24		
Maj. 10		51090 49950	27. 3.45 26.32.32			27. 4.11 26.32.58			31.13		26.48.34		
Maj. 13		49399 48318	26.17.20 25.47.20			26.17.46 25.47.44			30. 2		26. 2.45		
Maj. 18		46892 45826	25. 7.22 24.37.12			25. 7.45 24.37.34			30.11		24.52.39		
Maj. 20		45993 44937	24.41.57 24.11.51			24.42.19 24.12.13			30. 6		24.27.16		

Apr.

		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim borum	Diam. app. Sollis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
1667						
Maj. 22	ex literis Maraldi	45150 44076	24.17.57 23.47. 9	24.18.19 23.47.30	30.49	24. 2.54
Maj. 23	ex iisdem literis	44751 43654	24. 6.34 23.35. 0	24. 6.56 23.35.21	31.35	23.51. 8
Maj. 24		44337 43289	23.54.39 23.24.26	23.55. 0 23.24.47	30.13	23.39.53
Maj. 25		43990 42912	23.44.41 23.13.31	23.45. 2 23.13.52	31.10	23.29.27
Maj. 27		43153 42195	23.20.30 22.52.39	23.20.51 22.52.59	27.52	
Maj. 28		42922 41854	23.13.48 22.42.41	23.14. 9 22.43. 1	31. 8	22.58.35
Maj. 29		42595 41530	23. 4.18 22.33.11	23. 4.39 22.33.31	31. 8	22.49. 5
Maj. 31		41987 40938	22.46.34 22.15.48	22.46.54 22.16. 8	30.46	22.31.31
Jun. 1		41703 40652	22.38.16 22. 7.21	22.38.36 22. 7.41	30.55	22.23. 9
Jun. 2		41440 40375	22.30.34 21.59.11	22.30.54 21.59.31	31.23	22.15.12
Jun. 3		41146 40132	22.21.55 21.52. 0	22.22.15 21.52.20	29.55	22. 7.18
Jun. 4		40935 39889	22.15.42 21.44.48	22.16. 2 21.45. 7	30.55	22. 0.35
Jun. 5		40704 39653	22. 8.55 21.37.48	22. 9.15 21.38. 7	31. 8	21.53.41
Jun. 6		40489 39441	22. 2.34 21.31.29	22. 2.54 21.31.48	31. 6	21.47.21
Jun. 7		40293 39230	21.56.46 21.25.12	21.57. 6 21.25.31	31.35	21.41.19

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Jun.

1667		Tangen- tes cor- dæ a p- umbræ	Diff. a vertice apprens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	"	"	G	I	II
JUN. 9	ex iisdem literis	39922 38884	21.45.46			21.46.5			30.53			21.30.38		
JUN. 10		39765 38713	21.41.7			21.41.26			31.21			21.25.43		
JUN. 11		39612 38571	21.36.35			21.36.53			31.2			21.21.22		
JUN. 14		39248 38210	21.25.44			21.26.3			31.2			20.10.32		
JUN. 16		39085 38050	21.20.53			21.21.12			30.58			21.5.43		
JUN. 17		39015 37980	21.18.48			21.19.7			30.59			21.3.37		
JUN. 18		38965 37930	21.17.18			21.17.37			31.0			21.2.7		
JUN. 21	Mezzavacca ephem. tomo p. pag. 70. Mengol. de re fract. p. 19. cum quibus con- fentiunt schedæ M. S. S. Au- gustini Fabrii. In literis au- tem Maraldi consignatur tan- gens limbi inferioris 38908; de limbo superiori cum illis convenit	38907 37872	21.15.34			21.15.53			31.0			21.0.23		
JUN. 22	Mengolus eodem loco, & M. S. S. Fabrii. Literæ Ma- raldi consentiunt de limbo superiore, inferioris vero tan- gentem exhibent 38905	38915 37868	21.15.49			21.16.8			31.22			21.0.27		
JUN. 23	Ex literis Maraldi.	38925 37890	21.16.7			21.16.26			31.2			21.0.55		
JUN. 26	Ex iisdem literis.	39065 38030	21.20.18			21.20.37			31.0			21.5.7		

		Tangen tes cor re ctæ a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
1667			G 1 11	G 1 11	1 11	G 1 11
Dec. 15	Mengol. in Anno pag. 22	248075 241550	68. 2.44 67.30.39	68. 5. 0 67.32.52	32. 8	67.48.56
Dec. 16	Mengol. eodem loco	248613 242072	68. 5.18 67.33.16	68. 7.34 67.35.29	32. 5	67.51.32
Dec. 22	Mengol. de refractionibus pag. 19	249976 243400	68.11.48 67.39.53	68.14. 5 67.42. 7	31.58	67.58. 6
1668						
Apr. 14	ex MSS. August. Fabrii	69950 68600	34.58.22 34.27. 0	34.58.57 34.27.35	31.22	34.43.16
Apr. 15	ex iisdem M. S. S.	69036 67704	34.37.11 34. 5.59	34.37.46 34. 6.34	31.12	34.22.10
Apr. 17	ex iisdem	67235 65930	33.54.54 33.23.49	33.55.29 33.24.23	31. 6	33.39.56
Apr. 19	ex iisdem	65500 64210	33.13.29 32.42.16	33.14. 2 32.42.48	31.14	32.58.25
Apr. 20	ex iisdem	64640 63378	32.52.43 32.21.57	32.53.15 32.22.29	30.46	32.37.52
Apr. 21	ex iisdem	63810 62545	32.32.31 32. 1.25	32.33. 3 32. 1.57	31. 6	32.17.30
Apr. 22	ex iisdem	62990 61740	32.12.24 31.41.28	32.12.56 31.41.59	30.57	31.57.27
Apr. 30	ex iisdem	56960 55775	29.39.57 29. 9. 2	29.40.27 29. 9.31	30.56	29.24.59
Maj. 1	ex iisdem M. S. S. subnubi lum. utcumque	56250 55090	29.21.29 28.51. 2	29.21.57 28.51.30	30.27	29. 6.44
Maj. 3	ex iisdem	54920 53760	28.46.32 28.15.45	28.47. 0 28.16.12	30.48	28.31.36
Maj. 6		53016 51868	27.55.50 27.24.54	27.56.17 27.25.20	30.57	27.40.48

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Maj,

1668		Tangen tes corre ctæ a pe nombra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen t. 1
			G I II	G I II	I II	G I II
Maj. 7	ex MSS. Fabrii	52410 51272	27.39.32 27. 8.42	27.39.58 27. 9. 8	30.50	27.24.33
Maj. 8	Hanc observationem con signat Fabrius die 9. Sed re liquarum progressus ostendit pertinere ad diem 8	51830 50696	27.23.52 26.53. 0	27.24.18 26.53.26	30.52	27. 8.52
Maj. 11		50080 48975	26.36. 6 26. 5.37	26.36.31 26. 6. 1	30.30	26.21.16
Maj. 12		49530 48464	26.20.57 25.51.23	26.21.22 25.51.47	29.35	26. 6.35
Maj. 13	Extant hujus diei tangen tes in M. S. S. Fabrii 47050, & 47850 (vel 45850) quæ a penumbra correctæ sunt 47000, & 45900, sed nulla ratione cum sequentibus ac præcedentibus conciliari pos sunt. Suspicio esset eas ad diem 17 spectare, nisi paullo infra haberetur ejus diei ob servatio nonnihil ab hac di screpans					
Maj. 15		47990 46830	25.38.10 25. 7.19	25.38.33 25. 7.42	30.51	25.23. 7
Maj. 17		47006 45892	25.10.35 24.39. 5	25.10.58 24.39.28	31.30	24.55.13
Maj. 19		46103 45020	24.45. 3 24.14.14	24.45.26 24.14.36	30.50	24.30. 1
Maj. 20		45676 44600	24.32.57 24. 2.12	24.33.17 24. 2.34	30.43	24.17.56
Maj. 21		45250 44183	24.20.48 23.50.14	24.21.10 23.50.36	30.34	24. 5.53

Maj.

1668		Tangen- tes cor- diæ a pe- numbra	Dift. a vertice apparens limborum	Dift. a vertice vera lim- borum	Diam. app. Solis	Dift. a vertice vera cen- tri
		G 1 11	G 1 11	1 11	G 1 11	
Maj. 23	ex MSS. Fabrii	44840 43770	24. 9. 5 23.38.21	24. 9.27 23.38.43	30.44	23.54.
Maj. 24		44060 43000	23.46.41 23.16. 4	23.47. 3 23.16.25	30.38	23.31.44
Maj. 25		43695 42640	23.36.10 23. 5.36	23.36.31 23. 5.58	30.34	23.21.14
Maj. 26		43280 42250	23.24.11 22.54.14	23.24.32 22.54.33	29.57	23. 9.33
Maj. 27		42995 41945	23.15.55 22.45.21	23.16.16 22.45.42	30.34	23. 0.59
Maj. 31		41770 40716	22.40.12 22. 9.16	22.40.33 22. 9.36	30.57	22.25. 4
Jun. 2		41230 40195	22.24.23 21.53.51	22.24.43 21.54.11	30.32	22. 9.27
Jun.10		39615 38610	21.36.40 21. 6.42	21.37. 0 21. 7. 1	29.59	21.22. 0
Jun.11		39492 38484	21.33. 0 21. 2.55	21.33.19 21. 3.14	30. 5	21.18.16
Jun.12		39380 38395	21.29.41 21. 0.16	21.30. 0 21. 0.35	29.25	21.15.18
Jun.13	ex iisdem. Mengolus vero in Anno pag. 16 limbi supe- rioris tangentem 5 particulis minorem facit	39270 38250	21.26.24 20.55.55	21.26.43 20.56.14	30.29	21.11.29
Jun.14	ex iisdem. Consentit Men- golus eodem loco	39180 38145	21.23.42 20.52.45	21.24. 1 20.53. 4	30.57	21. 8.32
Jun. 15	ex iisdem. Mengolus eo- dem loco limbi sup. tangen- tem particulis 10 breviorum confignat	39100 38072	21.21.20 20.50.35	21.21.39 20.50.54	30.45	21. 6.16

Jun.

1668		Tangen tes cor- de a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	II	I	II
Jun. 16	ex iisdem, & consentit Mengolus ib. pag. 15	39040 37998	21.19.33 20.48.21	21.19.52 20.48.40	31.12	21. 4.16
Jun. 17	ex iisdem. Consentit Men- gol. ibidem	38985 37948	21.17.55 20.46.51	21.18.14 20.47.10	31. 4	21. 2.42
Jun. 18	ex iisdem M. S. S.	38940 37905	21.16.34 20.45.33	21.16.53 20.45.52	31. 1	21. 1.22
Jun. 20	ex iisdem. Sed Mengolus de refract. pag. 19 majorem tangente mulctat particulis duabus	38901 37872	21.15.25 20.44.34	21.15.44 20.44.53	30.51	21. 0.18
Jun. 21	ex iisdem, & consentit Mengolus ib. Sed Mezzavac- ca ephem. tomo p. pag. 70 majorem tangentem auget part. 9	38908 37860	21.15.36 20.44.12	21.15.55 20.44.31	31.24	21. 0.13
Jun. 22	ex iisdem, consentiente Mengol. ib.	38910 37885	21.15.40 20.44.56	21.15.59 20.45.15	30.44	21. 0.37
Jun. 23	ex iisdem	38943 37900	21.16.39 20.45.24	21.16.58 20.45.43	31.15	21. 1.20
Jun. 26		39105 38090	21.21.29 20.51. 7	21.21.48 20.51.26	30.22	21. 6.37
Jun. 27		39100 38170	21.24.18 20.53.31	21.24.37 20.53.50	30.47	21. 9.13
Jun. 28		39300 38270	21.27.18 20.56.31	21.27.37 20.56.50	30.47	21.12.13
Jun. 30		39545 38495	21.24.35 21. 3.15	21.24.54 21. 3.34	31.20	21.19.14
Jul. 1		39675 38640	21.28.26 21. 7.35	21.28.45 21. 7.54	30.51	21.23.19

Jul.

		Tangen tes corre ctæ a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
1668						
Jul. 3	ex iisdem	40000 38960	21.48. 5 21.17. 9	21.48.25 21.17.28	30.57	21.32.56
Jul. 5		40370 39330	21.59. 2 21.28.11	21.59.22 21.28.30	30.52	21.43.56
Jul. 10		41550 40510	22.33.46 22. 3.11	22.34. 6 22. 3.31	30.35	22.18.48
Sept. 14		89000 87364	41.40. 9 41. 8.32	41.40.56 41. 9.18	31.38	41.25. 7
Sept. 15		90205 88542	42. 3. 7 41.31.21	42. 3.54 41.32. 7	31.47	41.48. 0
Sept. 20		96542 94800	43.59.32 43.28.15	44. 0.23 43.29. 5	31.28	43.44.44
Sept. 21		97876 96100	44.23. 6 43.51.39	44.23.57 43.52.29	31.28	44. 8.13
Sept. 22		99222 97416	44.46.35 44.15. 0	44.47.26 44.15.51	31.35	44.31.38
Sept. 23		100590 98760	45.10. 7 44.38.33	45.10.59 44.39.24	31.35	44.55.11
Sept. 24		101967 100120	45.33.28 45. 2. 4	45.34.21 45. 2.56	31.25	45.18.38
Sept. 29		109190 107195	47.30.55 46.59.20	47.31.52 47. 0.16	31.36	47.16. 9
Sept. 30		110700 108680	47.54.26 47.22.55	47.55.24 47.23.52	31.32	47.39.38
Oct. 1		113766 111685	48.41. 4 48. 9.34	48.42. 3 48.10.32	31.31	48.26.17

Dec.

1668		Tangen- tes cor- re a pe- numbra	Diff. a vertice apparent limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	II	I	II
Dec. 12	Mengolus in anno pag. 22. Ex MSS. vero Fabrii ad diem 11 Decembris deducuntur tangentes correctæ a penum- bra 246470, & 239988, quæ ut apparet, quam minimum ab his discrepant quas Men- golus die 12 consignat, exhi- bentque distantiam centri So- lis a vertice prorsus eandem. Liquet ergo utramque obser- vationem ad eundem diem spectare, huncque non alium esse quam diem 12 ostendit Solis longitudo, quæ prodit gr. 21 $\frac{1}{3}$ +	246473 239984	67.54.59 67.22.44	67.57.14 67.24.56	32.18	67.41.5
Dec. 19	Mengol. de refract. pag. 19 & seq. & in Anno pag. 24. In schedis vero Fabrii configura- tur tangens limbi inferioris 249974 (quæ correctæ est 249924) cum adjecta nota. Vide nam pro 74 erat 64; quæ correctio cum Mengoli nu- meris convenit	249914 243284	68.11.31 67.39.19	68.13.48 67.41.33	32.15	67.57.41
Dec. 20	Mengolus iisdem locis. Consentiunt MSS. Fabrii	250000 243365	68.11.55 67.39.44	68.14.12 67.41.58	32.14	67.58.5
Dec. 21	Mengolus iisdem locis. Consentiunt MSS. Fabrii, & literæ Maraldi, quæ nomen observatoris subdunt Augusti- nus Fabri	250000 243400	68.11.55 67.39.53	68.14.12 67.42.7	32.5	67.58.9
Dec. 22	Mengolus iisdem locis	249914 243284	68.11.30 67.39.19	68.13.47 67.41.33	32.14	67.57.40

Dec.

		<i>Tangen tes cor re ctæ a pe nombra</i>	<i>Diff. a vertice apparens limborum</i>	<i>Diff. a vertice vera lim borum</i>	<i>Diam. app. Solis</i>	<i>Diff. a vertice vera cen tri</i>
1668			G 1 11	G 1 11	1 11	G 1 11
Dec. 23	ex MSS. Fabrii	249702 243105	68.10.30 67.38.26	68.12.47 67.40.39	32. 8	67.56.43
Dec. 24	ex MSS. Fabrii. Mengo lus autem in anno pag. 22 tangente[m] limbi inferioris correctam a penumbra facit 249177, ex qua prodit Solis diameter debito minor; ita que Fabrii numeri veriores videntur	249440 242808	68. 9.15 67.46.57	68.12.32 67.39.10	32.22	67.55.21
Dec. 25	Mengolus in Anno pag. 22, & de refract. pag. 63	249015 242400	68. 7.24 67.34.55	68. 9.31 67.37. 8	32.23	67.53.19
Dec. 27	Mengolus in Anno pag. 22	247914 241400	68. 1.57 67.29.54	68. 4.13 67.32. 6	32. 7	67.48.10
Dec. 28	Mengolus eodem loco	247212 240744	67.58.34 67.26.35	68. 0.50 67.28.47	32. 3	67.44.49
Dec. 30	Mengolus eodem loco, con sentientibus MSS. Fabrii	245610 239170	67.50.46 67.18.34	67.53. 1 67.20.45	32.16	67.36.53
1669						
Jan. 2	Ex MSS. Fabrii <i>Sole nebu loso</i> . In hisce MSS. extant præterea per hos dies compa rationes observationum cum locis Solis ex Cassinianis ta bulis; & interdum quidem ex tangentibus observatis lo cum Solis supputat, & cum Cassiniana longitudine con fert, interdum ex Cassiniana longitudine tangentes com putat, easque cum observatis tangentibus comparat, atque ut plurimum consentire repe-	242493 236185	67.35.24 67. 3. 8	67.37.37 67. 5.17	32.20	67.21.27

R

Jan.

1669		Tangen tes corre ctæ a pe nombra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G	I	G	I	G
	rit, ut hac ipsa die 2 Januarii prodeunt illi ex tabulis tan gentes incorrectæ 242535, & 236156, quæ parum absunt ab observatis, nec correctis 242543, & 236135. Utitur porro in hisce computis obli quitate eclipticæ gr. 23. 29 0, latitudine Bononiæ gr. 44 29.5, & parallaxis Solis, ac refractionibus Cassinianis an tiquioribus, quæ nempe cum Malvasiæ, & Mezzavacchiis ephemeridibus vulgaræ sunt pro æstivis, æquinoctialibus, atque hybernis temporibus diversæ					
Jan. 10	Ex iisdem Fabrii MSS. <i>Sole Claro tremulo</i> . Hodie tangen tes ex computo correctæ a penumbra 230810, 225044	230810 225011	66.34.30 66. 2.19	66.36.36 66. 4.22	32.14	66.20.29
Jan. 12	Ex iisdem <i>Sole Claro</i> . Tan gentes ex computo correctæ 227228, & 221601.	227260 221594	66.14.58 65.42.41	66.17. 2 65.44.42	32.20	66. 0.52
Jan. 14	Ex iisdem. Tang. correctæ ex computo 223508, 218033	223485 217983	65.53.37 65.21.24	65.55.39 65.23.23	32.16	65.39.31
Feb. 2	Ex iisdem. Tang. ex compu to correctæ 182639, 178703	182668 178720	61.18. 7 60.46.17	61.19.46 60.47.54	31.52	61. 3.50
Feb. 10	Ex iisdem. Tang. ex compu to 165119, 161733 correctæ	165142 161753	58.48.12 58.16.29	58.49.41 58.17.56	31.45	58.33.48
Feb. 16	Ex iisdem <i>Sole Claro</i> . Sub dit Fabrius observatio calculo præcise concordat	152648 149615	56.46.16 56.14.31	56.47.37 56.15.51	31.46	56.31.44

Mer.

1669		Tangen tes corre ctæ a pe nultima	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G 1 11	G 1 11	G 1 11	G 1 11	G 1 11
Mar. 21	Ex literis Maraldi, consen tientibus MSS. Fabrii, ubi tangentes correctæ ex com puto 97204, 95431	97204 95432	44.11.16 43.39.40	44.12. 7 43.40.30	31.37	43.56.18
Mar. 27	Ex MSS. Fabrii, ubi eas dem omnino ex computo re perit	89509 87867	41.49.53 41.18.17	41.50.40 41.19. 4	31.36	41.34.52
Mar. 29	Ex iisdem, ubi subdit ob servatio, & calculus	87098 85504	41. 3.19 40.31.54	41. 4. 5 40.32.39	31.26	40.48.22
Mar. 30	Ex iisdem, nec constac computo an observatione in ventæ sint	85915 84342	40.40. 4 40. 8.42	40.40.49 40. 9.22	31.27	40.25. 5
Mar. 31	Ex iisdem, ubi ex compu to corr. 84760, 83194	84752 83202	40.16.55 39.45.40	40.17.40 39.46.24	31.16	40. 2. 2
Apr. 8	ex iisdem MSS.	76042 74603	37.15. 0 36.43.27	37.15.39 36.44. 5	31.34	36 59.52
Maj. 18		46685 45568	25. 1.32 24.29.51	25. 1.55 24.30.13	31.42	24.46. 4
Maj. 19	<i>Cæle obscuro</i>	46218 45135	24.48.20 24.17.31	24.48.43 24.17.53	30.50	24.33.18
Maj. 23		44542 43466	24. 0.33 23.29.34	24. 0.55 23.29.55	31. 0	23.45.25
Maj. 25		43780 42717	23.38.38 23. 7.51	23.39. 0 23. 8.11	30.49	23.23.36
Jun. 14		39205 38170	21.24.27 20.53.31	21.24.46 20.53.50	30.56	21. 9.18
Jun. 18		38942 37912	21.16.37 20.45.45	21.16.56 20.46. 4	30.52	21. 1.30
Jun. 19		38915 37898	21.15.49 20.45.20	21.16. 8 20.45.39	30.29	21. 0.54

R 2

Jun.

1669		Tangen- tes cor- re æpe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri			
		G	I	II	I	II	G	I	II
JUN. 20	Ex iisdem MSS. sed Mengol. de refract. pag. 19 tangentes exhibet 38904, & 37860	38900 37874	21.15.22 20.44.37	21.15.41 20.44.56	30.45	21. 0.19			
JUN. 21	Ex MSS. Fabrii. Mengol. autem prædicto loco habet 38900, & 37864	38900 37874	21.15.22 20.44.37	21.15.41 20.44.56	30.45	21. 0.19			
JUN. 22	ex iisdem MSS.	38905 37880	21.15.31 20.44.48	21.15.50 20.45. 7	30.43	21. 0.29			
Dec. 12	Ex iisdem. Consentit Mengol. in anno pag. 22	246280 239818	67.54. 3 67.21.53	67.56.18 67.24. 5	32.13	67.40.11			
Dec. 13	Ex iisdem dubia. At Mengol. eodem loco habet 247004, & 240594	247000 240595	67.57.32 67.25.50	67.59.47 67.28. 2	31.45	67.43.55			
Dec. 14	Mengolus eodem loco. Fabrius autem in MSS. habet 247857, & 241492, ubi dubiam vocat observationem	247757 241291	68. 1.12 67.29.21	68. 3.28 67.31.34	31.54	67.47.31			
Dec. 19	Ex literis Maraldi, consentientibus Fabrii MSS.	249875 243245	68.11.19 67.39. 7	68.13.36 67.41.21	32.15	67.57.28			
Dec. 22	Ex literis Maraldi, & schedis Fabrii	249950 243338	68.11.41 67.39.35	68.13.58 67.41.49	32. 9	67.57.53			
Dec. 24	Ex literis Maraldi. Fabrius in schedis habet 249481, 242875. Mengolus vero loco prædicto 249440, 242855	249484 242875	68. 9.28 67.37.17	68.11.45 67.39.30	32.15	67.55.37			
Dec. 26	Ex literis Maraldi. Schedæ autem Fabrii, & Mengolus tangentem utramque una particula minorem faciunt	248627 242072	68. 5.22 67.33.16	68. 7.38 67.35.29	32. 9	67.51.33			

Dec.

		Tangen tes cor re ctæ ap pe numbra	Diff. a vertice apparens limborum.	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G	I	II	I	II
1669						
Dec. 28	Ex MSS. Fabrii. Consentit Mengolus eodem loco	247390 240920	67.59.26 67.27.28	68. 1.42 67.29.40	32. 2	67.45.41
Dec. 29	Consentunt Mengolus, schedæ Fabrii, & Maraldi li teræ	246660 240200	67.55.54 67.23.49	67.58. 9 67.26. 1	3. 8	67.42. 5
1670						
Jan. 4	Ex literis Maraldi, & MSS. Fabrii	240266 234118	67.24.10 66.52.15	67.26.22 66.54.23	31.59	67.10.23
Jan. 17	Ex iisdem utrisque	218030 212788	65.21.41 64.49.44	65.23.40 64.51.40	32. 0	65. 7.40
Jan. 18		215966 210800	65. 9.15 64.37.16	65.11.13 64.39.11	32. 2	64.55.12
Jan. 23		205347 200608	64. 2. 6 63.30.16	64. 3.57 63.32. 5	31.52	63.48. 1
Jan. 25	Ex MSS. Fabrii	200970 196400	63.32.44 63. 0.59	63.34.33 63. 2.45	31.48	63.18.39
Feb. 6	Ex literis Maraldi. Hanc observationem notat Fabrius ad diem 7; verum longitudo Solis, quæ prodit = 18. 4 procul dubio diem 6 indicat	174332 170730	60. 9.38 59.38.30	60.11.13 59.40. 3	31.10	59.55.38
Feb. 24	Maraldi literæ, & Fabrius	137507 134890	53.58.26 53.26.56	53.59.38 53.28. 6	31.32	53.43.52
Feb. 25	ex iisdem	135655 133050	53.36.13 53. 4.18	53.37.24 53. 5.28	31.56	53.21.26
Feb. 26	ex iisdem	133770 131270	53.13.12 52.42. 1	53.14.22 52.43.10	31.22	52.58.46

Mar.

1670		Tangen tes corre ctæ ape numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G	I	G	I	G
Mar. 4	Ex MSS. Fabrii. De limbo superiore consentiunt Maral di literæ, sed inferioris tan gentem faciunt 123868, men dose, ut videtur	123268 120985	50.56.38 50.25.28	50.58.2 50.26.31	31.31	50.42.16
Mar. 8	Maraldi literæ, & Fabrius	116680 114526	49.24.8 48.52.25	49.25.9 48.53.25	31.44	49.9.17
Mar. 10	ex iisdem	113518 111410	48.37.21 48.52.1	48.38.20 48.6.19	32.1	48.22.19
Mar. 13	ex iisdem	108913 106920	47.26.35 46.54.56	47.27.32 46.55.52	31.40	47.11.42
Mar. 14	ex iisdem	107420 105446	47.25.5 46.31.7	47.35.51 46.32.2	31.49	46.47.56
Mar. 15	ex literis Maraldi. Mezza vacca ephem. tomo p. pag. 46 habet 106000, & 104000	105950 103998	46.39.17 46.7.22	46.40.12 46.8.16	31.56	46.24.14
Mar. 19	Maraldi literæ, & Fabrius	100270 98430	45.43.8 44.33.9	45.53.30 44.34.0	31.30	44.49.45
Apr. 3	ex iisdem	79448 77965	38.28.0 37.56.3	48.28.42 37.57.12	31.30	38.12.57
Apr. 18	ex iisdem	66805 65477	33.44.41 33.12.55	33.45.15 33.13.28	31.47	33.29.21
Apr. 19	ex iisdem	65913 64617	33.23.24 32.52.10	33.23.58 32.52.43	31.15	33.8.20
Apr. 25	ex iisdem	60991 59760	31.22.46 30.51.45	31.23.17 30.52.15	31.2	31.7.46
Apr. 29	ex schedis Fabrii	58005 56820	30.6.57 29.36.19	30.7.26 29.36.47	30.39	29.52.7
Apr. 30	Maraldi literæ, & Fabrius	57295 56113	29.48.38 29.17.54	29.49.6 29.18.22	30.44	29.33.44

Maj.

		Tangen- tes cor- re- ctæ a pe- numbra	Diff. a vertice apparentis limborum			Diff. a vertice vera lim- borum			Diam. app. Solis	Diff. a vertice vera cen- tri		
			G	I	II	G	I	II		G	I	II
1670												
Maj. 1	ex iisdem	56521 55413	29.28.32			29.29.0			29.0	29.14.30		
Maj. 2		55922 54746	29.12.54			29.13.22			30.57	28.57.53		
Maj. 5		53950 52776	28.20.49			28.21.16			31.26	28.5.33		
Maj. 6		53320 52148	28.4.0			28.4.27			31.33	27.48.40		
Maj. 7		52702 51550	27.47.24			27.47.50			31.8	27.32.16		
Maj. 13		49266 48158	26.13.40			26.14.4			30.48	25.58.40		
Maj. 14	ex MSS. Fabrii <i>obscura Sole</i>	48748 47638	25.59.18			25.59.42			30.59	25.44.12		
Maj. 15	ex MSS. Fabrii. Consentit Maraldus, sed dubiam obser- vationem arbitratur, atque adeo litura eam induxerat	48232 47138	25.44.55			25.45.19			30.39	25.30.0		
Maj. 18	Maraldi literæ, & Fabrius	47738 46645	25.31.8			25.31.31			30.44	25.16.9		
Maj. 22	ex iisdem	45024 43963	24.14.21			24.14.43			30.26	23.59.30		
Jun. 13	Mengolus in anno pag. 7	39320 38297	21.27.53			21.28.12			30.34	21.12.55		
Jun. 14	Mengolus ibidem. Maral- dus vero, & Fabrius mino- rem tangentem correctam fa- ciunt 38138, sed Mengoli numeros Solis diameter com- probare videtur	39227 38188	21.25.7			21.25.26			31.3	21.9.55		

Jun.

1670		Tangen- tes cor- re- ctæ a pe- numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis	Diff. a vertice vera cen- tri	
			G	I	G	I		I	G
Jun. 15	Consentiunt Maraldus, Fa- brius, Mengolus	39130 38107	21.22.14 20.51.37		21.22.33 20.51.56		30.37	21. 7.14	
Jun. 16	Maraldus, Fabrius, Mengolus	39060 38030	21.20. 9 20.49.18		21.20.28 20.49.37		30.51	21. 5. 1	
Jun. 18	Mengolus ib. Maraldi vero literæ, & Fabrii MSS. habent pro tangente limbi superioris correcta 37963, unde brevius- cula elicitur Solis diameter	38950 37913	21.16.51 20.45.47		21.17.10 20.46. 6		31. 4	21. 1.38	
Jun. 19	Maraldus, Fabrius, Men- golus. Addit Fabrius <i>inter nubes</i>	38920 37872	21.15.58 20.44.34		21.16.17 20.44.53		31.24	21. 0.35	
Jun. 20	Maraldus, Fabrius, Mengolus	38910 37863	21.15.40 20.44.18		21.15.59 20.44.37		31.22	21. 0.18	
Jun. 21	ex iisdem	38910 37863	21.15.40 20.44.18		21.15.59 20.44.37		31.22	21. 0.18	
Jun. 22	Mengolus ib. Consentiunt schedæ Fabrii, verum obser- vatio transverso signo indu- cta erat	38890 37882	21.15. 4 20.44.51		21.15.23 20.45.10		30.13	21. 0.17	
Jun. 24	Maraldus, Mengolus, Fabrius	38970 37930	21.17.27 20.46.18		21.17.46 20.46.37		31. 9	21. 2.11	
Jun. 25	ex iisdem	39013 37973	21.18.44 20.47.36		21.19. 3 20.47.55		31. 8	21. 3.29	
Jun. 28	Mengolus in anno pag. 7	39241 38200	21.25.32 20.54.25		21.25.52 20.54.44		31. 8	21.10.18	
Jul. 10	ex MSS. Fabrii	41410 40383	22.29.41 21.59.25		22.30. 1 21.59.45		30.16	22.14.53	
Jul. 13	ex iisdem	42270 41210	22.54.49 22.23.48		22.55.10 22.24. 8		31. 2	22.39.39	

Jul.

		Tangen tes cor- re Æ a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
1670			G I II	G I II	I II	G I II
Jul. 14	ex iisdem MSS., quæ po- strema in iis est observatio	42580 41510	23. 3.51 22.32.35	23. 4.12 22.32.55	31.17	22.48.33
Sept. 10	ex Maraldi literis	83730 82202	39.56.22 39.25.15	39.57. 6 39.25.58	31. 8	39.41.32
Sept. 11	ex iisdem	84877 83338	40.19.25 39.48.26	40.20.10 39.49.10	31. 0	40. 4.40
Sept. 14		88407 86820	41.28.44 40.57.52	41.29.31 40.58.48	30.43	41.14.10
Sept. 15		89613 87991	41.51.52 41.20.42	41.52.39 41.21.29	31.10	41.37. 4
Sept. 17		92088 90412	42.38.29 42. 7. 2	42.39.17 42. 7.49	31.28	42.23.33
Sept. 18		93336 91642	43. 1.38 42.30.10	43. 2.22 42.30.58	31.24	42.46.40
Sept. 19		94612 92880	43.24.51 42.53. 9	43.25.47 42.53.58	31.43	43. 9.50
Sept. 20		95897 94190	43.48. 0 43.17.11	43.48.50 43.18. 0	30.50	43.33.25
Sept. 21	ex iisdem, sed observatio minime cum aliis consentit	97840 95992	44.22.28 43.49.43	44.23.19 43.50.33	32.46	44. 6.56
Sept. 22		98583 96788	44.35.28 44. 3.54	44.36.19 44. 4.45	32.34	44.20.32
Sept. 26		104128 102226	46. 9.31 45.37.50	46.10.25 45.38.43	31.42	45.54.34
Sept. 29		108476 106508	47.19.41 46.48. 8	47.20.48 46.49.14	31.34	47. 1. 1
Dec. 15	Mengol. in anno pag. 22	248243 247738	68. 3.32 67.31.56	68. 5.48 67.33.49	31.59	62.49.48
Dec. 31	Mengol. ibidem	245110 238710	67.48.20 67.16.13	67.50.35 67.18.24	32.11	67.34.29

S

Sept.

		Tangen- tes cor- re- ctæ a pe- numbra	Diff. a vertice apparent limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
1671			G 1 11	G 1 11	1 11	G 1 11
Sept. 18	Montanarius, & socii. Ex ephemeride eruditorum hu- jus anni pag. 169. Eadem no- tæ tangentes Lunæ incorre- ctæ 102083. 100133	93020 91337	42.55.44 42.24.27	42.56.33 42.25.15	31.18	42.40.54
Sept. 19	ex eadem ephemeride	94297 92586	43.19.8 42.47.43	43.19.58 42.48.32	31.26	43. 4.15
Oct. 4	ex MSS. Montanarii. Con- sentiant literæ Maraldi, mo- nentque hanc, & sequentes observationes ab ipso Monta- nario (aut fortè a sociis) fuisse habitas, usque ad diem 22 Septembris 1672, quæ ultima est in hisce literis observatio	115764 113635	49.10.43 48.39.7	49.11.43 48.40.6	31.37	48.55.54
Oct. 18	ex MSS. Montanarii. In Maraldi autem literis tangens minor correctæ est 135304 mendose, ut videtur	140014 137304	54.27.54 53.56.2	54.29.7 53.57.13	31.54	54.23.10
Oct. 20	ex MSS. Montanarii, & Maraldi literis	143820 141030	55.11.19 54.39.38	55.12.35 54.40.52	31.43	54.56.43
Nov. 20	ex MSS. Montanarii, & Maraldi literis, in his adje- ctus est observationi asteris- cus, quæ Maraldo nota est observationum minus certa- rum obnebulas, aut aliis de causis, itaque & nos deinceps eam notam, ubi ille apposuit, adscriptimus	209918 205006	64.31.41 63.59.50	64.33.35 64. 1.41	31.54	64.27.38

		Tangen- tes corre- ctæ a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
1671						
Dec. 12	ex iisdem utrisque. Maraldi tamen literæ tangentem lim- bi superioris 3 particulis ma- jorem faciunt, quod nihil turbat	245860 239422	67.52. 0 67.19.52	67.54.15 67.22. 3	32.12	67.38. 9
Dec. 13	ex iisdem utrisque	246695 240225	67.56. 4 67.23.57	67.58.19 67.26. 9	32.10	67.42.14
Dec. 18	In MSS. Mont. tang. incor- rectæ 249544, 242863, sed hanc posteriorem perperam corrigit, scribens 242883, cum debeat esse correctæ 242913; deinde computum absolvit, ac transverso calamo delet. Post pauca tangentes iterum cõsignat incorrectas nulla diei mentionem 249544, 242863, easq. corrigit 249544, 242913, & rursum transverso signo in- ducit, nempe quod iterum lapsus esset omittens subtra- ctionem part. 50 ex majori. In literis vero Maraldi incor- rectæ sunt 249544, & 242833, atque ex his correctas elicui, & in seriem retuli	249494 242883	68. 9.31 67.37.19	68.11.48 67.39.32	32.16	67.55.40
1672						
Jan. 1	MSS. Montanarii, & Ma- raldi literæ	244367 237967	67.44.40 67.12.24	67.46.54 67.14.34	32.20	67.30.44
Jan. 2	ex iisdem utrisque	243327 236991	67.39.32 67. 7.21	67.41.46 67. 9.31	32.15	67.25.38
Jan. 4	ex utrisque	240930 234673	67.27.31 66.55.12	67.29.43 66.57.21	32.22	67.13.32

1672		Tangen tes cor re & a pe numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G 1 11	G 1 11	1 11	G 1 11
Jan. 10	ex MSS. Montanarii	232048 226215	66.42.12 66. 9. 6	66.43.19 66.11. 9	32.10	66.27.14
Jan. 13	ex iisdem, & ex Maraldi literis	226760 221090	66.12.10 65.39.45	66.14.14 65.41.46	32.28	65.58. 0
Jan. 18	ex utrisque	216971 211755	65.15.20 64.43.16	65.17.18 64.45.11	32. 7	65. 1.15
Jan. 20 *	ex literis Maraldi. Monta narii MSS. tangentem majo rem 10 particulis augment, minorem totidem minuunt, itaque centri Solis locus fere idem prodit	212840 207740	64.50. 3 64.17.43	64.51.59 64.19.36	32.23	64.35.47
Feb. 11	Maraldi literæ, & Monta narius	164572 161188	58.42.56 58.21. 5	58.44.25 58.12.32	31.53	58.28.28
Feb. 21	Maraldi literæ	144150 141345	55.15. 1 54.43.16	55.16.17 54.44.30	31.47	55. 0.25
Feb. 24	Montanarius, & Maraldi literæ	138405 135750	54. 9. 4 53.37.22	54.10.16 53.38.33	31.43	53.54.24
Feb. 25	Montanarii MSS. In Ma raldi literis limbus superior defideratur	136536 133875	53.46.51 53.14.30	53.48. 2 53.15.40	32.22	53.31.51
Feb. 27	Montan. MSS. & Maraldi literæ	132863 130360	53. 1.58 52.30.29	53. 3. 8 52.31.38	31.30	52.47.23
Mar. 3	ex literis Maraldi. In MSS. Montanarii habetur tangens limbi inferioris 124688 corr., quæ nimiam efficit Solis dia metrum	124088 121775	51. 8. 7 50.36.27	51. 9.11 50.37.31	32.40	50.53.22
Mar. 6	ex MSS. Montanarii	119062 116875	49.58.23 49.26.55	49.59.26 49.27.56	31.30	49.43.41

Mar.

		Tangen- tes cor- re- ctæ a pe- numbra	Diff. a vertice apparent limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
1672						
Mar. 13	ex literis Maraldi. Monta- narius in MSS. tangentem majorem correctam consignat 108134	108134 106150	47.14.17 46.42.32	47.15.13 46.43.27	31.46	46.39.20
Mar. 14	ex MSS. Montanarii. Con- sentunt Maraldi literæ	106642 104710	46.50.28 46.19.5	46.51.24 46.20.0	31.24	46.35.42
Mar. 15	Montanarii, & Maraldi literæ	105166 103265	46.26.32 45.55.13	46.27.27 45.56.7	31.20	46.11.47
Mar. 16	ex iisdem	103752 101820	46.3.18 45.31.0	46.4.12 45.31.53	32.19	45.48.2
Mar. 17		102320 100461	45.39.25 45.7.54	45.40.18 45.8.46	31.32	45.24.32
Mar. 19		99553 97730	44.52.18 44.20.32	44.53.9 44.21.23	31.46	44.37.16
Mar. 26		90400 88770	42.6.49 41.33.44	42.7.56 41.36.31	31.5	41.52.3
Mar. 27		89178 87540	41.43.33 41.11.56	41.44.20 41.12.42	31.38	41.28.31
Mar. 28		87981 86358	41.20.30 40.48.48	41.21.17 40.49.34	31.43	41.5.25
Apr. 1		83262 81767	39.46.53 39.16.19	39.47.37 39.17.2	30.35	39.32.20
Apr. 2		82163 80644	39.24.27 38.53.2	39.25.10 38.53.45	31.25	39.9.27
Apr. 4	ex Maraldi literis. In MSS. Montanarii tangens limbi sup. correctæ est 78412, ex qua Solis diameter adhuc ma- jor colligeretur; itaque ut apparet, particularum 50 ad dictionem omisit	79972 78472	38.39.0 38.7.19	38.39.42 38.8.0	31.42	38.23.51

Apr.

		Tangen- tes corr Et a pe- numbra	Dist. a vertice apparent limborum			Dist. a vertice vera lim- borum			Diam. app. Solis			Dist. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
1672														
Apr. 5.	ex MSS. Montanarii, & Maraldi literis	78881 77410	38.16. 0			38.16.41			31.24			38. 0.39		
Apr. 6	ex Maraldi literis. Consentit Mont. esto in correctione lim- bi inf. duas particulas omiserit	77822 76370	37.53.27			37.54. 8			31.20			37.38.28		
Apr. 7 *	ex MSS. Montanarii, & Maraldi literis	76790 75350	37.31.14			37.31.54			31.22			37.16.13		
Apr. 8 *		75745 74323	37. 8.31			37. 9.10			31.17			36.53.31		
Apr. 9		74751 73320	36.46.43			36.47.21			31.48			36.31.27		
Apr. 10 ?		73752 72348	36.24.35			36.25.13			31.31			36. 9.27		
Apr. 11 *		72780 71383	36. 2.49			36. 3.26			31.36			35.47.38		
Apr. 12 *		71810 70440	35.40.56			35.41.32			31.18			35.25.33		
Apr. 14		69930 68575	34.57.54			34.58.29			31.29			34.42.45		
Apr. 15		68997 67653	34.36.17			34.36.52			31.31			34.21. 6		
Apr. 19		65466 64165	33.12.40			33.13.13			31.31			32.57.27		
Apr. 20 *		64620 63325	32.52.14			32.52.47			31.37			32.36.58		
Apr. 23	ex Maraldi literis. Sed MSS. Montan. habent 62175, 60885, quæ Solis speciem ni- mis ampliant, centrum tamen parum mutant.	62165 60895	32.52. 1			32.52.32			31.40			31.36.42		

Apr.

		Tangen tes corre diæ ape numbra	Diff. a vertice appatens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
1672			G ° ' "	G ° ' "	° ' "	G ° ' "
Apr. 24	ex Maraldi literis. Sed in MSS. Montan. 61396, 60115. Maraldi numeri Solis diame tro propius respondent	61386 60115	31.32.39 31. 0.58	31.33.10 31. 1.28	31.42	31.17.19
Apr. 25	ex Maraldi literis, & Mon tanarii MSS.	60601 59350	31.12.58 30.41.21	31.13.28 30.41.50	31.38	30.57.39
Maj. 19	ex Maraldi literis. Montan. MSS. pro limbo infer. dant 42345 corr.	42349 41286	22.57. 7 22.26. 1	22.57.28 22.26.21	31. 6	22. 41.55
Jun. 12	ex MSS. Montanarii	39388 38346	21.29.56 20.58.48	21.30.15 20.59. 7	31. 8	21.14.41
Jun. 20	ex literis Maraldi. In MSS. Mont. limbus sup. 37862	38902 37865	21.15.25 20.44.21	21.15.44 20.44.40	31. 4	21. 0.12
Jun. 21	Montanarius, & Maraldi literæ	38903 37865	21.15.27 20.44.21	21.15.46 20.44.40	31. 6	21. 0.13
Jun. 24	ex iisdem	38996 37959	21.18.14 20.47.11	21.18.33 20.47.30	31. 3	21. 3. 1
Jun. 28	ex MSS. Montanarii	39305 38265	21.27.26 20.56.23	21.27.45 20.56.41	31. 4	21.12.13
Jun. 29	Montanarius, & Maraldi literæ	39416 38380	21.30.44 20.59.49	21.31. 3 21. 0. 8	30.55	21.15.35
Jul. 6	ex literis Maraldi. In MSS. Mont. limbus sup. 39546	40588 39542	22. 5.28 21.34.29	22. 5.48 21.34.48	31. 0	21.50.18
Jul. 9	ex iisdem literis. Sed in MSS. Mont. 41306, 40244	41282 40246	22.25.55 21.55.21	22.26.15 21.55.42	30.33	22.10.58
Jul. 16	ex iisdem literis. In MSS. Mont. limbus inf. 43427	43424 42362	23.28.21 22.57.30	23.28.42 22.57.51	30.51	23.13.16

Sept.

1672		Tangen tes cor- re- ctæ a pe- nombra	Diff. a vertice apparentis limborum			Diff. a vertice vera lim- borum			Diam. app. Solis	Diff. a vertice vera cen- tri		
			G	I	II	G	I	II		G	I	II
Sept. 3	ex iisdem literis. Mont. in MSS. habet 76848, & 75210, unde enormis diameter Solis	76748 75310	37.30.20			37.31. 0			31.21	37.15.19		
Sept. 11	ex MSS. Mont., & Maraldi literis	85467 83898	40.31.11			40.31.56			31.36	40.16. 8		
Sept. 15	Montan. & Maraldi litera:	90250 88598	42. 3.59			42. 4.46			31.34	41.48.59		
Sept. 21	ex iisdem	97938 96145	44.24.12			44.25. 3			31.45	44. 9.10		
Sept. 22	ex iisdem	99270 97474	44.47.24			44.48.15			31.22	44.32.34		
Sept. 23	ex iisdem; atque hæc po- strema est observatio in Ma- raldi literis	100638 98809	45.10.56			45.11.48			31.33	44.56. 1		
Oct. 8	ex MSS. Montanarii	123528 121244	51. 0.32			51. 1.36			31.28	50.45.52		
Oct. 10	ex iisdem	126912 124610	51.45.50			51.46.56			30.41	51.31.35		
Oct. 15		135825 133244	53.38.16			53.39.27			31.35	53.23.39		
Oct. 21		147227 144346	55.48.53			55.50.11			31.44	55.34.19		
Oct. 27		159372 156149	57.53.36			57.55. 2			31.49	57.39. 7		
Dec. 1		232573 226752	66.44. 1			66.46. 9			31.58	66.30.10		
Dec. 4		237230 232250	67. 8.34			67.10.43			26.18			

Dec.

		Tangen tes cor diæ a p numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Sollis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
1672						
Dec. 24	Hæc observatio extra alia rum seriem notatur in MSS. Montan. ubi subdit Solem distare a Tropico min. 3.0, quod optime in hunc diem convenit	249425 242816	68. 9.11 67.36.59	68.11.28 67.39.12	32.16	67.55.20
Dec. 28	ex iisdem MSS.	247210 240735	67.58.33 67.26.32	68. 0.49 67.28.44	32. 5	67.44.47
Dec. 29		246418 239972	67.54.43 67.22.39	67.56.59 67.24.51	32. 8	67.40.55
1673						
Jan. 1	ex MSS. Montanarii	243580 237228	67.40.47 67. 8.34	67.43. 1 67.10.46	32.15	67.26.53
Jan. 2	ex iisdem. Sed suspicor pertinere ad diem 3	241193 235008	67.28.51 66.56.57	67.31. 3 66.59. 6	31.57	67.15. 4
Jan. 11		226960 223288	66.23.17 65.52.29	66.25.21 65.54.31	20.50	
Jan. 13	Hæc observatio in MSS. Montanarii notatur die 12, sed vere ad diem 13 pertinet	225325 219784	66. 4. 5 65.32. 5	66. 6. 8 65.34. 5	32. 3	65.50. 6
Mar. 26		90704 89048	42.12.34 41.41. 5	42.13.21 41.41.51	31.31	41.57.36
Apr. 8		76010 74576	37.14.19 36.42.51	37.14.58 36.43.29	31.29	36.59.14
Apr. 13	Quædam hic subdit Mon tanarius, quibus indicare vi detur observationi se diffidere	71070 69800	35.24. 5 34.54.55	35.24.41 34.55.30	29.11	35.10. 6
Apr. 14	Addit observatorum no mina D. Manzjus cum Fabrio	70148 68793	35. 2.57 34.31.30	35. 3.32 34.32. 5	31.27	34.47.48

T

Apr.

1673		Tangen- tes cor- ræ a p- numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis	Diff. a vertice vera cen- tri	
			G	I II	G	I II		I II	G I II
Apr. 15	ex MSS. Montan. calo ser.	69215 67880	34.41.22 34.10. 9		34.41.57 34.10.44		31.13		34.26.20
Apr. 22	Calo subnubilo	63150 61900	32.16.22 31.45.28		32.16.54 31.45.59		30.55		32. 1.27
Apr. 23	ut supra	62346 61110	31.56.31 31.25.45		31.57. 3 31.26.16		30.47		31.41.40
Apr. 29		57808 56615	30. 1.54 29.31. 0		30. 2.23 29.31.29		30.54		29.46.56
Maj. 5	cum D. Valente Medico, & Antiquario Regis Christianiss.	53771 52614	28.16. 3 27.45. 3		28.16.30 27.45.30		31. 0		28. 1. 0
Jun. 21		38905 37865	21.15.31 20.44.21		21.15.50 20.44.40		31.10		21. 0.13
Jun. 22	Subdit Solem distitisse a Tropico sec. 24. Atque hæc in hisce MSS. novissima est observatio	38918 37880	21.15.54 20.44.48		21.16.13 20.45. 7		31. 6		21. 0.40
1674									
Jan. 24	ex MSS. Julii Cæsaris Cal- cinæ Calo subnubilo. In hoc libello observationes a Men- golo, aut sociis habitas ipse exscripserat	203075 198440	63.46.59 63.15.18		63.48.49 63.17. 3		31.44		63.32.37
Jan. 26	ex eodem. Calo sereno	198705 194202	63.17. 9 62.45.17		63.18.56 62.47. 2		31.54		63. 2.55
Jan. 27	ex eodem	196472 192090	63. 1.30 62.29.56		63. 3.16 62.31.40		31.36		62.47.21
Jan. 30		189700 185990	62.12.15 61.44. 6		62.13.58 61.45.47		28.11		
Feb. 3	Sole claro	180915 177030	61. 4. 7 60.32.20		61. 5.45 60.33.56		31.49		60.49.50

Feb.

1674		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G 1 11	G 1 11	1 11	G 1 11
Feb. 5	ex iisdem MSS. Sole claro	176488 172712	60.27.49 59.55.45	60.29.25 59.57.19	32. 6	60.13.22
Feb. 28		130110 127715	52.27.17 51.56.21	52.28.25 51.57.27	30.58	52.12.56
Mar. 7		118230 116050	49.46.30 49.14.55	49.47.32 49.15.56	31.36	39.31.44
Mar. 16		104423 102518	46.14.22 45.42.45	46.15.16 45.43.38	31.38	45.59.27
Mar. 21		97475 95705	44.16. 3 43.44.35	44.16.54 43.45.25	31.29	44. 1. 9
Mar. 23	Sole suboscuro	94808 93103	43.28.24 42.57.16	43.29.14 42.58. 5	31. 9	43.13.39
Mar. 28	Sole claro	88545 86934	41.31.24 41. 0. 6	41.32.11 41. 0.52	31.19	41.16.31
Apr. 3		81582 80700	39.12.30 38.41. 4	39.13.13 38.41.46	31.27	38.57.29
Apr. 10		74220 72825	36.34.59 36. 3.50	36.35.27 36. 4.17	31.10	36.19.52
Jun. 11		39562 38530	21.35. 5 21. 4.18	21.35.24 21. 4.37	30.47	21.20. 0
Jun. 13		39320 38288	21.27.53 20.57. 4	21.28.12 20.57.23	30.49	21.12.47
Jun. 19		38920 37885	21.15.58 20.44.16	21.16.17 20.45.15	31. 2	21. 0.46
Jun. 20		38910 37870	21.15.41 20.44.30	21.16. 0 20.44.49	31.11	21. 0.24
Jun. 22		38905 37877	21.15.31 20.44.42	21.15.50 20.45. 1	30.49	21. 0.25

T 2

Jan.

1675		Tangen tes cor de a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Ulam. app. Sollis	Diff. a vertice vera cen tri
		G 1 11	G 1 11	G 1 11	G 1 11	G 1 11
Jan. 12	ex ephemeride Fabrii hu jus anni, observantibus Mon tanario, atque ipso Fabio	228020 222362	66.19.11 65.47.9	66.21.16 65.49.11	32.5	66.5.13
Mar. 31	ex adversariis Gulielmini claro	85248 83718	40.26.49 39.56.8	40.27.34 39.56.52	30.42	40.12.13
Apr. 3	ex iisdem adversariis, ubi apposita est nota ☿ indicans diem Veneris, ac mendose, fuit enim dies ☿. pallido	81940 80367	39.19.53 38.47.16	39.20.36 38.47.58	32.38	39.4.17
Apr. 5	ex iisdem claro	79697 78195	38.33.14 38.1.25	38.33.56 38.2.6	31.50	38.18.1
Nov. 6	Sole languido	179244 175530	60.50.34 60.19.46	60.52.11 60.21.21	30.50	60.37.46
Nov. 14	ex iisdem Sole pallido	196828 192537	63.4.1 62.33.12	63.5.47 62.34.56	30.51	62.50.21
Dec. 4	ex iisdem Sole tremulo	236142 230163	67.2.55 66.30.59	67.5.4 66.33.5	31.59	66.49.4
Dec. 11	Claro	244930 238537	67.47.37 67.15.20	67.49.52 67.17.30	32.22	67.33.41
Dec. 12	Sole tremulo	245834 239409	67.51.53 67.19.48	67.54.8 67.21.58	32.10	67.38.3
1676						
Jan. 20	ex adversariis Gulielmini Sole claro, at suspecta & sero	212780 207627	64.49.40 64.16.58	64.51.36 64.18.50	32.46	64.35.13
Feb. 8	Sole claro	170960 167380	59.40.31 59.8.39	59.42.4 59.10.10	31.54	59.26.7
Feb. 15	Sole tremulo, sed tutissimam arbitror	256092 252977	57.21.16 56.49.15	57.22.40 56.50.36	32.4	57.6.38

Feb.

		Tangen- tes cor- re- ctæ a pe- numbra	Diff. a vertice apparent limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
1676						
Feb. 16	ex adverf. Guliel. Sole claro	154048 150993	57. 0.38 56.29. 3	57. 2. 0 56.30.23	31.37	56.46.11
Feb. 19	apud D. Montanarium					
Feb. 20	apud D. Montanarium. De siderantur itaque horum die rum obfervationes, cum ne que in MSS. Montanarii eas reperim					
Feb. 23	Sole claro	140230 137347	54.30.25 53.58.55	54.31.38 54. 0. 7	31.31	54.15.52
Feb. 25	Sole claro	136465 133869	53.46. 0 53.14.18	53.47.11 53.15.28	31.43	53.31.19
Feb. 26	Sole claro	134647 132098	53.23.55 52.52.26	53.25. 6 52.53.36	31.30	53. 9.21
Feb. 27	Sole claro	132830 130298	53. 1.34 52.29.41	53. 2.44 52.30.49	31.55	52.46.46
Feb. 28	Sole claro	131012 128554	52.38.46 52. 7.17	52.39.55 52. 8.24	31.31	52.24. 9
Feb. 29	Sole claro	129231 126803	52.16. 2 51.44.24	52.17.10 51.45.30	31.40	52. 1.20
Mar. 2	Sole tremulo	125735 123777	51.30.14 51. 3.55	51.31.20 51. 4.59	26.21	
Mar. 3	Sole claro	120665 118440	50.21. 0 49.49.32	50.22. 3 49.50.34	31.29	50. 6.18

Mar.

1676		Tangen tes cor- dæ a pe- numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis		Diff. a vertice vera cen- tri	
			G	I II	G	I II	I II		G	I II
Mar. 11	<i>Sole claro. Suspecta valde quod species Solis inciderit prope columnam. Nimirum hoc loco meridiana linea co- lumnarum duarum australem distingit, ibique lineæ libra- mentum nonnihil depressum Gulielmus a Montanario accepisse potuit. Vide quæ de hujus examine diximus ca- pite octavo</i>	111125 109064	48. 0.59 47.28.57		48. 1.57 47.29.54		32. 3		47.43.55	
Mar. 16	<i>Sole claro</i>	103685 101797	46. 2.12 45.30.38		46. 3. 6 45.31.31		31.35		45.47.18	
Mar. 19	<i>Sole tremulo</i>	99495 97680	44.51.19 44.19.40		44.52.11 44.20.31		31.40		44.36.21	
Mar. 20	<i>Sole pallido. Fallacissime quod fero advenerim</i>	98125 96350	44.27.28 43.56. 6		44.28.19 43.56.57		31.22		44.12.38	
Mar. 25	<i>Sole claro</i>	91606 89928	42.29.30 41.57.52		42.30.18 41.58.39		31.39		42.14.28	
Apr. 8	<i>Sole claro</i>	75730 74297	37. 8.13 36.36.41		37. 8.52 36.37.19		31.33		36.53. 5	
Oct. 27		159362 156187	57.53.30 57.22.13		57.54.56 57.23.37		31.19		57.39.16	
Nov. 5	<i>Sole pallido</i>	178728 174882	60.46.41 60.14.19		60.48.17 60.15.54		32.23		60.31. 6	
Nov. 26	<i>Sole pallido</i>	223645 218190	65.54.31 65.22.38		65.56.34 65.24.37		31.57		65.40.35	
Dec. 3	<i>Sole pallido</i>	235773 229825	67. 0.59 66.29. 8		67. 3. 8 66.31.14		31.54		66.47.11	
Dec. 6	<i>Sole pallido</i>	240030 233860	67.22.58 66.50.54		67.25. 9 66.53. 2		32. 7		67. 9. 5	

Dcc.

		Tangen tes corre ctæ a pe numbra	Dif. a vertice apparens limborum	Dif. a vertice vera lim borum	Diam. app. Solis	Dif. a vertice vera cen tri
1676			G I II	G I II	I II	G I II
Dec. 7	ex adversariis Gulielmini <i>Sole tremulo</i>	241300 235175	67.29.23 66.57.50	67.31.35 66.59.59	31.36	67.15.47
1677						
Jan. 20	ex iisdem <i>Sole pallido</i>	211110 206170	64.39.13 64. 7.30	64.41. 8 64. 9.22	31.46	64.25.15
Apr. 16	<i>Sole clavo dubia</i>	68330 66965	34.20.42 33.48.30	34.21.17 33.49. 5	32.12	34. 5.11
Nov. 16	<i>Sole languido</i>	202407 197855	63.42.30 63.11.13	63.44.19 63.13. 0	31.19	63.28.39
Nov. 21		215193 210096	65. 4.33 64.32.49	65. 6.30 64.34.43	31.47	64.50.36
Nov. 24		219277 213990	65.29. 6 64.57.10	65.31. 6 64.59. 7	31.59	65.15. 6
Nov. 27		225094 219570	66. 2.47 65.30.49	66. 4.50 65.32.49	32. 1	65.48.49
Nov. 29		228750 223050	66.23.13 65.51. 7	66.25.18 65.53.10	32. 8	66. 9.14
1678						
Mar. 10	ex iisdem <i>Sole limbo</i>	1113404 111330	48.35.39 48. 4. 8	48.36.39 48. 5. 6	31.33	48.20.52
Mar. 11	<i>Sole clavo</i>	111842 109806	48.11.59 47.40.32	48.12.58 47.41.30	31.28	47.57.14
Mar. 13	<i>Sole clavo</i>	108808 106805	47.24.56 46.53. 5	47.25.53 46.54. 1	31.52	47. 9.57
Mar. 22	<i>Sole pallido</i>	96090 94345	43.51.28 43.20. 0	43.52.19 43.20.50	31.29	43.36.34

Feb.

		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
1679			G I II	G I II	I II	G I II
Feb. 20	ex adversariis Gulielmini Sole claro	145540 142687	55.30.26 54.58.33	55.31.43 54.59.48	31.55	55.25.48
Feb. 21	Sole pallido	143568 140815	55. 8.30 54.37.10	55. 9.46 54.38.24	31.22	54.54. 5
Mar. 17	Dubia Sole pallido	103333 101396	45.56.21 45.23.49	45.57.15 45.24.42	32.33	45.40.58
Mar. 18	Sole claro dubia	101950 100050	45.33.12 45. 0.50	45.34. 5 45. 1.42	32.23	45.17.54
Mar. 19	Sole claro	100535 98688	45. 9.10 44.37.19	45.10. 2 44.38.11	31.51	44.54. 6
1684						
Jul. 6	ex iisdem	40645 39610	22. 7.11 21.36.31	22. 7.31 21.36.51	30.40	21.52.21
Jul. 8	Ad hanc observationem notat Gulielminus vitiatum esse Heliometrum D. Petro nii. Vide quæ diximus cap.9	41105 40050	22.20.43 21.49.35	22.21. 3 21.49.55	31. 8	22. 5.29
Jul. 10		41613 40575	22.35.38 22. 5. 6	22.35.59 22. 5.26	30.33	22.20.42
Jul. 11		41905 40850	22.44.11 22.13.13	22.44.32 22.13.33	30.59	22.29. 2
Jul. 12		42194 41138	22.52.37 22.21.42	22.52.58 22.22. 2	30.56	22.37.30
Jul. 13	Sole claro	42492 41428	23. 1.18 22.30.12	23. 1.39 22.30.32	31. 7	22.46. 5
Jul. 14	Sole claro	42825 41755	23.11. 0 22.39.48	23.11.21 22.40. 9	31.12	22.55.45
Jul. 15	Sole claro	43145 42082	23.20.18 22.49.21	23.20.39 22.49.42	30.57	23. 5.10

Jul.

		Tangen tes corre ctæ a pe numbra	Dist. a vertice apparent limborum	Dist. a vertice vera lim borum	Diam. app. Solis	Dist. a vertice vera cen tri
			G I II	G I II	I II	G I II
1684						
Jul. 18	ex adv. Gul. Solo claro	44220 43140	23.51.18 23.20. 7	23.51.39 23.20.28	31.11	23.36. 3
Jul. 22	Sole claro	45840 44765	24.37.35 24. 6.57	24.38.10 24. 7.19	30.51	24.22.44
1690						
Apr. 13	ex libello MS. Gusielmi ni, in quo Solis locum die cim ex observationibus sup putabat. Ad hunc diem no tat Heliometrum viciatum esse. Subdit nomen observa toris Oretus; deinde addit quoniam perpendicularum in sta tu presenti breve est, & fortasse lamina foraminis vergit ali qualiter ad Austrum, hinc tan gentes breviores evadunt, & minor angulus distantie centri Solis a vertice, & per conse quens major consurgit declina tio Solis, ex quo majorem di stantiam a primo puncto Arctis ostendit Gnomon D. Petronii	71238 69890	35.27.45 34.57. 0	35.28.21 34.57.36	30.45	35.12.58
Apr. 27	ex adv. Gul. & ex eod. libel lo, ubi subdit est autem radius certissime brevior, & lamina non est horizontalis, ut ex diametro nimis magna aperte dignoscitur	59387 58158	30.42. 8 30.10.53	30.42.38 30.11.22	31.16	30.27. 0
Jun. 1	ex eodem Gulielmini libel lo, ubi subdit nomen observa toris Exc. Donellus, additque ad heliometrum D. Petronii cu jus tamen centrum in suo situ, & differentia altitudinis gnom onis censetur 10 particularum	41602 40540	22.35.19 22. 4. 4	22.35.50 22. 4.24	31.26	22.20. 7

V

Jun.

1690		Tangen- tes corve- læ a pe- numbra	Diff. a vertice apparenti limborum		Diff. a vertice vera lim- borum		Diam. app. Solis	Diff. a vertice vera cen- tri	
			G	I II	G	I II		I II	G I II
Jun. 2	ex adversariis Guliel. Sole claro cum Gnomone esset altior debito & particulis circiter. In libello addit observatorum nomina Donellus, & Sandrius	41320 40388	22.27.2	21.56.37	22.27.22 21.56.57		30.25	22.12.9	
Jun. 6	ex advers. Gul. Gnomone ut supra constituto.	40402 39365	22. 0. 0 21.29.14		22. 0.20 21.29.33		30.47	21.44.56	
Jun. 10	ex adversariis Gul.ubi sub- dit Gnomone recte, ut videtur, constituto, dubitissima. In libel- lo autem supputationum ad hanc observationem hæc no- tat. Gnomone recte se habente quoad omnia, dubitissima tamen, eo quod tangentes sumptæ sint per relationem ad speciem ex tra lineam post meridiem, cum in meridie nubes eam obvela- verint	39703 38665	21.39.18 21. 8.21		21.39.38 21. 8.40		30.58	21.24.9	
Jun. 18	ex adv. Guliel. Sole tremulo	38980 37938	21.17.45 20.46.33		21.18. 4 20.46.52		31.12	21. 2.28	
Jun. 19	ex iisdem. Sole admodum tremulo	38942 37912	21.16.38 20.45.47		21.16.57 20.46. 6		30.51	21. 1.31	
Jun. 20	ex iisdem Sole claro	38930 37900	21.16.16 20.45.25		21.16.35 20.45.44		30.51	21. 1. 9	
Jun. 21	Sole claro	38924 37894	21.16. 6 20.45.14		21.16.25 20.45.33		30.52	21. 0.59	
Jun. 22	Sole claro caelo subnubilo.	38940 37912	21.16.35 20.45.47		21.16.54 20.46. 6		30.48	21. 1.30	

Jun.

		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparentis limborum		Diff. a vertice vera lim borum		Diam. app. Solis		Diff. a vertice vera cen tri	
			G	°	G	°	°	′	G	°
1690										
Jun. 23	ex libello supputationum Guliel. In adversariis autem habet 39000, & 38127 in correctæ, quæ correctæ sunt 38950, 38177, unde fit Solis diameter perquam exigua, itaque libelli numeros prætu li. Addit in adversariis Sole pallido cælo nubilo	38950 37919	21.16.53 20.46.0		21.17.12 20.46.19		30.53		21. 8.45	
Jun. 24	ex eodem libello Sole tre mulo cælo tamen serenissimo exactissima	38993 37967	21.18. 9 20.47.25		21.18.28 20.47.44		30.44		21. 3. 6	
Jun. 27	ex eodem libello. Extat etiam hæc observatio in ad versariis Sole pallido cælo nu bilo. Sed limbi superioris nu meri ambigue scripti	39200 38177	21.24.19 20.53.44		21.24.38 20.54. 3		30.35		21. 9.20	
Jun. 28	ex adversariis Guliel. Sole claro, sed cælo subnubilo	39292 38261	21.27. 4 20.56.15		21.27.23 20.56.34		30.49		21.11.58	
Jun. 29	ex libello supputationum dubia, quia species pallida, & observatio sumpta est causa nubium per relationem ad spe ciem extra lineam	39410 38382	21.30.34 20.59.53		21.30.53 21. 0.12		30.41		21.15.32	
Jul. 3	ex adversariis Guliel. & libello supputationum	39972 38930	21.47.16 21.16.16		21.47.36 21.16.35		31. 1		21.32. 5	
Jul. 4	ex iisdem	40145 39110	21.52.24 21.21.38		21.52.44 21.21.57		30.47		21.37.21	
Jul. 5	ex iisdem	40340 39298	21.58.10 21.27.15		21.58.30 21.27.34		30.56		21.43. 2	
Jul. 6	ex iisdem	40545 39500	22. 4.13 21.33.15		22. 4.33 21.33.34		30.59		21.49. 3	

V 2

Jul.

1690		Tangen- tes corre- ctæ a pe- numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis		Diff. a vertice vera cen- tri	
			G	I II	G	I II	I II		G	I II
Jul. 7	ex libello supputationum <i>Sole claro ego solus exactissima</i>	40764 39716	22.10.41 21.39.40		22.11. 1 21.40. 0		31. 1		21.55.30	
Jul. 12	ex advers. & libello suppu- tationum	42055 41010	22.48.34 22.17.55		22.48.55 22.18.15		30.40		22.33.35	
Jul. 14	ex advers. & libello. In advers. subdit <i>Sole pallidissi- mo, ut vix speciei terminis pos- sent distingui, qui tamen recti- ficati sunt per limbos termina- tiores extra lineam</i>	42667 41618	23. 6.23 22.35.47		23. 6.44 22.36. 8		30.36		22.51.26	
Jul. 15	ex advers. <i>Sole pallido cali- nub. Sed in libello supputa- tionum tangens limbi sup- incorrecta 41886, unde cor- recta 41936</i>	42982 41942	23.15.34 22.45.15		23.15.55 22.45.36		30.19		23. 0.45	
Jul. 16	ex libello supputationum <i>Guliel. Sole claro, sed tremulo & caelo sereno</i>	43339 42287	23.25.54 22.55.19		23.26.16 22.55.40		30.36		23.10.58	
Jul. 18	ex advers. <i>Sole claro caelo subnubilo</i>	44057 43002	23.46.37 23.16. 8		23.46.59 23.16.29		30.30		23.31.44	
Jul. 19	ex adv. dubia propter nubes	44424 43358	23.57.10 23.26.26		23.57.32 23.26.47		30.45		23.42. 9	
Jul. 20	ex advers. <i>Sole claro</i>	44828 43760	24. 8.46 23.38. 4		24. 9. 8 23.38.26		30.42		23.53.47	
Sept. 7	ut supra	80658 79160	38.53.21 38.22.55		38.54. 4 38.22.37		31.27		38.38.20	
Sept. 12	ex iisdem <i>Sole claro. Hanc & duas sequentes observatio- nes Gulielmus die uno an- tevertit, sed Solis longitudo diem prodit</i>	86280 84705	40.47.16 40.15.59		40.48. 1 40.16.43		31.18		40.32.22	

Sept.

1690		langen	Diff.	Diff.	Diam.	Diff.
		tes corre ctæ ap numbra	a vertice apparens limborum	a vertice vera lim borum	app. Solis	a vertice vera cen tri
			G I II	G I II	I II	G I II
Sept. 13	ex iisdem Sole diluto	87462 85862	41.10.25 40.39.0	41.11.11 40.39.45	31.26	40.55.28
Sept. 14	ex iisdem Sole claro Sandrius	88670 87030	41.33.49 41.2.0	41.34.36 41.2.46	31.50	41.18.41
Sept. 17	ex iisdem Sole claro	92338 90653	42.43.8 42.11.36	42.43.56 42.12.23	31.33	42.28.9
Sept. 18	ex iisdem Sole claro, sed calo nubilo	93585 91903	43.6.8 42.35.2	43.6.57 42.35.50	31.7	42.51.23
Sept. 19	ex iisdem Sole claro Sandrius	94878 93165	43.29.40 42.58.25	43.30.30 42.59.14	31.16	43.14.52
Sept. 20	Sole claro	96179 94430	43.53.3 43.21.33	43.53.54 43.22.22	31.32	43.38.8
Sept. 21	Sole claro	97502 95728	44.16.32 43.44.59	44.17.23 43.45.50	31.33	44.1.36
Sept. 22	Sole claro	98835 97058	44.39.52 44.8.47	44.40.44 44.9.32	31.12	44.25.8
Sept. 23	Sole languido	100215 98393	45.3.42 44.32.10	45.4.34 44.33.2	31.32	44.48.48
Sept. 24	Sole tremulo	101578 99745	45.26.55 44.55.37	45.27.48 44.56.29	31.19	45.12.8
Sept. 26	Sole languidissimo dubia	104400 102520	46.14.0 45.42.47	46.14.54 45.43.40	31.14	45.59.17
Sept. 27	Sole languido	105842 103940	46.37.33 46.6.25	46.38.28 46.7.19	31.9	46.22.53
Oct. 5	Sole languidissimo, ut vix termini possent distingui	118068 115908	49.44.12 49.12.50	49.45.13 49.13.50	31.23	49.29.31
Oct. 9	Sole diluto	124680 122390	51.16.7 50.44.57	51.17.12 50.46.0	31.12	51.1.36

		Tangen- tes corre- ctæ a pe- numbra	Diff. a vertice apparentis limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
1690			G 1 11	G 1 11	1 11	G 1 11
Oct. 13	ex iisd. Sole languido dubia	131638 129178	52.46.40 52.15.21	52.47.49 52.16.39	31.20	52.32.9
Oct. 30	Sole languido caelo nubilo	164902 161563	58.46.0 58.14.40	58.47.29 58.16.7	31.22	58.31.48
1691						
Dec. 20	Ex libello supputationum Gulielmini Sole nubilo Donel- lus, ubi tangentem minorem consignat 243645, quæ cor- recta est 243695. Sed verio- rem esse eam, quam ex sche- da libello inclusa defumpsi, & prætuli, ostendit Solis diameter	250020 243405	68.12.1 67.39.55	68.14.18 67.42.10	32.8	67.58.14
Dec. 23	ex eodem MS. non exacta Donellus. Hæc quoque obser- vatio una cum supputatio- ne exarata erat in scheda li- bello inclusa cum adjecta no- ta non exacta	249950 243305	68.11.41 67.39.25	68.13.58 67.41.38	32.20	67.57.48
Dec. 27	ex libello supputationum Gulielmini. Ego cum Donello Sole limbo specie diluta	248327 241805	68.3.56 67.31.56	68.6.12 67.34.9	32.3	67.50.10
Dec. 28	ex eodem MS. Donellus tangens minor, nam alla ha- beri non potuit propter coadju- toris defectum 241222	67.29.0	67.31.13		
Dec. 29	ex eodem MS. Donellus, & ego, & specie clara	246960 240515	67.57.21 67.25.25	67.59.37 67.27.38	31.59	67.43.37
Dec. 30	ex eodem MS. Donellus Sole clare certa. tangens minor 239738	67.21.28	67.23.40		

Jan.

		Tangen- tes cor- re- ctæ a pe- nombra	Dist. a vertice apparens limborum	Dist. a vertice vera lim- borum	Diam. app. Solis	Dist. a vertice vera cen- tri
		G	I	II	I	II
1695						
Jan. 8	Ex adversariis Gulielmini, quorum liber tertius ab hac ipsa observatione incipit, ubi initio notat observationes subsequentes a se ipso cum Cassino, hujusque filio fuisse habitas; tunc enim debebat Bononiz Cassinus, & restau- rando huic Gnomoni operam dabat, ut a nobis dictum est capite 10. In libello autem supputationum notatur ad hunc diem ego cum D. Cassino, tangens vero limbi superioris major est particulis 20, quam quæ hic consignatur. In ad- versariis habita dicitur ob- servatio Sole languido	234618 228717	66.54.55 66.23.2	66.57.4 66.25.7	31.57	66.41.5
Jan. 9	ex iisd. advers. Sole languido. In libello supputationum notatur Donellus cum Pafio	232988 227180	66.46.14 66.14.31	66.48.20 66.16.35	31.45	66.32.27
Jan. 10	ex iisdem adversariis Sole pallidissimo	231356 225593	66.37.28 66. 5.37	66.39.33 66. 7.40	31.55	66.23.37
Jan. 17	Sole pallidissimo	218265 212960	65.23. 5 64.50.48	65.25. 4 64.52.44	32.20	65. 8.54
Jan. 22	Sole pallido	207666 202770	64.17.14 63.44.56	64.19. 7 63.46.45	32.23	64. 2.56
Jan. 23	Sole pallido	205496 200120	64. 3. 4 63.26.55	64. 4.55 63.28.43	36.12	
Feb. 1	Sole pallido dein subdit Gnomonem depressiorem esse particulis 40. In libello autem supputationum addit observatorum nomina. D. Jacobus Cassinus, & ego	185598 181600	61.41. 8 61. 9.37	61.42.49 61.11.16	31.33	61.27. 2

Mart.

1695		Tangen- tes cor- rectæ a pe- nombra	Diff. a vertice apparentis limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G 1 11	G 1 11	G 1 11	G 1 11	G 1 11
Mar. 19	ex adversariis Gulielmini. <i>Sole pallido, & subdit: post reaptationem perfectam Gno- monis Divi Petronii. In li- bello supputationum hæc ha- bet. Restituo Gnomone Divi Petronii per D. Jo. Domini cum Cassinum &c. prima obser- vatio fuit die 19 Martii 1695. Sole languido. Ego cum D. Mezzavacca</i>	100368 98538	45. 6.19 44.34.41	45. 7.21 44.35.33	31.38	44.51.22
Mar. 21	ex adversariis Gulielmini <i>Sole languidissimo, & apparente ipso momento meridiei</i>	97615 95853	44.18.31 43.47.16	44.19.22 43.48. 6	31.26	44. 3.44
Mar. 23	ex adversariis Gulielmini: <i>Sole languidissimo ego cum D. Bordono. Tangens limbi su- perioris notatur incorrecta 93225 (ubi ambigi potest an 35) cui subscriptum est 243 cum hac nota verior ut puto primo accepta, sed non exacta. In libello autem supputa- tionum notat incorrectam 93225, quæ correctæ a pe- nombra est 93275, atque hanc lectionem secuti sumus</i>	94956 93275	43.31. 6 43. 0.27	43.31.56 43. 1.16	30.40	43.16.36
Mar. 29	<i>Cum D. Oredo Sole clare, sed remulo exacta hæc in adver- sariis, ubi minorem tangen- tem consignat 85880, quæ correctæ a penumbra est 85930; sed prætuli numeros, quos tradit in libello suppu- tationum</i>	87485 85870	41.10.52 40.39.10	41.11.38 40.39.55	31.43	40.55.46

Apr.

1695		Tangen tes corre diæ a pe numbra	Diff. a vertice apprens limborum			Diff. a vertice vera lim borum			Diam. app. Solis	Diff. a vertice vera cen tri		
			G	I	II	G	I	II		G	I	II
Apr. 2	Gul. in adv. Sole claro exacta	82835 81313	39.38.12	39.6.56	39.7.39	31.17	39.23.17					
Apr. 3	ex iisd. adv. Sole claro, & sereno	81717 80210	39.15.18	38.44.0	38.44.43	31.18	39.0.22					
Apr. 4	Sole pallidissimo, ut vix spe ciei margines distinguenter	80633 79160	38.52.49	38.21.54	38.22.36	30.56	38.38.4					
Apr. 5	Sole claro, sed nebula spe ciem intercurrente	79535 78050	38.29.50	37.58.21	37.59.2	31.30	38.14.47					
Apr. 6	Sole claro, sed tremulo, & flante vento ab Oriente	78456 77000	38.6.59	37.35.47	37.36.27	31.13	37.52.3					
Apr. 7	Tangentes calculatæ ex ephem. Mezzavacche pro die 7 ejus dem redactæ ad merid. appar. 77457, 75915 observari non potuerunt propter nubes. Hæc in adversariis Gulielmini											
Apr. 8	ex iisdem adversariis. Sole pallido, & spekte inter nubium hiatus identidem apparente	76365 74945	37.22.3	36.51.0	36.51.39	31.4	37.7.11					
Apr. 10	Sole pallidissimo, & dubia, quia sumpta extra lineam	74360 72988	36.38.5	36.7.30	36.8.7	30.36	36.23.25					
Apr. 11	Sole claro, & cælo sereno	73420 71916	36.17.10	35.43.20	35.43.57	33.50						
Apr. 13	Sole pallido, & cælo nubilofo	71398 70078	35.31.33	35.1.19	35.1.55	30.15	35.17.2					
Apr. 14	Sole claro, sed inter hiatus ec.	70480 69123	35.10.35	34.39.13	34.39.49	31.22	34.55.30					
Apr. 20	Sole languido D. Ucellus	65135 63843	33.4.42	32.33.19	32.33.52	31.23	32.49.33					

X

Apr.

		Tangen- tes corre- ctæ & pe- numbra	Diff. a vertice apparenti limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
1695														
Apr. 22	<i>Sole claro cælo sereno, specte tremula, exacta quo ad omnia. Ego cum D. Uccello, & Pafio</i>	63468 62202	32.24.9			32.24.41 31.53.29			31.12			32.9.5		
Apr. 23	<i>Sole pallido, specte tremula, cælo ad merid. nubilo</i>	62643 61405	32.3.52 31.33.7			32.4.24 31.33.38			30.46			31.49.1		
Apr. 25	<i>Sole claro. Observationum adjuncta, quæ Solis, cælique constitutionem spectant a Gulielmino prolixè descripta deinceps brevitatis studio in pauciora contraham</i>	61074 59828	31.24.51 30.53.29			31.25.21 30.53.39			31.22			31.9.40		
Apr. 26	<i>Sole claro</i>	60300 59076	31.5.25 30.34.23			31.5.55 30.34.53			31.2			30.50.24		
Apr. 27	<i>Sole claro</i>	59547 58324	30.46.22 30.15.9			30.46.52 30.15.38			31.14			30.31.15		
Apr. 28	<i>Sole claro</i>	58805 57595	30.27.27 29.56.25			30.27.56 29.56.54			31.2			30.12.25		
Apr. 29	<i>Sole claro</i>	58077 56867	30.8.48 29.37.33			30.9.17 29.38.2			31.15			29.53.39		
Apr. 30	<i>Sole claro</i>	57365 56156	29.50.27 29.19.0			29.50.56 29.19.28			31.28			29.35.12		
Maj. 1	<i>Sole pallido</i>	55973 54793	29.14.14 28.43.11			29.14.42 28.43.39			31.3			28.59.10		
Maj. 3	<i>Sole claro</i>	55301 54128	28.56.35 28.25.33			28.57.3 28.26.0			31.3			28.41.31		

Maj.

1695		Tangen- tes corre- ctæ a pe- numbra	Diff. a vertice apparentis limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	III	G	I	II
Maj. 4	<i>Sole pallido. Calculatæ sue- rant prius tangentes ex ephe- meride Mezzavacche, habita- tione inæqualitatis dierum, & meridiæ observatæ sunt quadrare speciei Solari. Hæc in adversariis. In libello au- tem supputationum tangen- tes ipsas consignat computo inventas, atque observatio- nem cum iis consentisse satis exacte; itaque eas in obser- vationum seriem hic retuli- mus. Computus autem, quo usus est, ponit Solem in \odot 14 6. 1 merid. æquali, & meridiæ apparent. 14.6.10, obliquita- tem eclipticæ gr. 23. 19. 0 & latitudinem Bononiæ gr. 44 30. 15</i>	54645 53479	28.39.16 28. 8.15			28.39.44 28. 8.42			31. 2			28.24.13		
Maj. 5	<i>Sole claro</i>	54003 52838	28.22.13 27.51. 4			28.22.40 27.51.32			31. 5			28. 7. 6		
Maj. 6	<i>Sole pallido</i>	53368 52217	28. 5.16 27.34.20			28. 5.43 27.34.47			30.56			27.50.15		
Maj. 8	<i>ut supra</i>	52146 50996	27.32.25 27. 1.12			27.32.52 27. 1.38			31.14			27.17.15		
Maj. 10	<i>Sole claro, & specie parum tremulo</i>	50977 49838	27. 0.41 26.29.27			27. 1. 7 26.29.52			31.15			26.45.29		
Maj. 11	<i>Claro, valde tremula specie</i>	50414 49282	26.45.17 26.14. 7			26.45.43 26.14.31			31.12			26.30. 7		
Maj. 12	<i>pallido. In libello. Suppu- tationum tangens limbi infe- rioris minor est quam hic particulis 10</i>	49865 48736	26.30.12 25.58.58			26.30.37 25.59.22			31.15			26.14.59		

X 2

Maj.

		Tangen tes cor re & a pe numbra	Dist. a vertice apparent limborum			Dist. a vertice vera lim borum			Diam. app. Solis			Dist. a vertice vera cen tri		
			G	I	II	G	I	II	I	II		G	I	II
1695														
Maj. 14	<i>Sole claro</i>	48804 47682	26.	0.	52	26.	1.	16	31.	19		25.	45.	36
Maj. 15	<i>Sole claro specie tremula</i>	48297 47180	25.	46.	45	25.	47.	9	31.	17		25.	31.	30
Maj. 17	<i>Sole pallidissimo, specie firma</i>	47290 46210	25.	18.	34	25.	18.	57	30.	27		25.	3.	43
Maj. 18	<i>Sole pallidissimo, specie firma</i>	46836 45746	25.	5.	48	25.	6.	11	30.	53		24.	50.	44
Maj. 22	<i>Sole pallidissimo</i>	45083 44034	24.	16.	2	24.	16.	24	30.	5		24.	1.	21
Maj. 23	<i>Sole pallidissimo</i>	44633 43647	24.	3.	10	24.	3.	32	28.	22		23.	49.	21
Maj. 24	<i>Sole claro</i>	44301 43223	23.	53.	38	23.	54.	0	31.	7		23.	38.	26
Maj. 27	<i>Sole claro</i>	43175 42136	23.	21.	9	23.	21.	30	30.	23		23.	6.	18
Maj. 31	<i>Sole claro. Sed proculdubio mendum est in tangente lim bi inferioris</i>	41050 40891	22.	19.	5	22.	14.	45						
Jun. 1	<i>Sole pallido. Extat etiam hæc observatio in descriptio ne hujus meridianæ a Cassi no, & Gulielmino edita Bo noniz 1695 pag. 54</i>	41665 40620	22.	37.	9	22.	37.	30	30.	43		22.	22.	9
Jun. 4		40901 39861	22.	14.	42	22.	15.	2	30.	44		21.	59.	40
Jun. 6	<i>Sole pallido</i>	40459 39425	22.	1.	40	22.	2.	0	30.	41		21.	46.	39
Jun. 7	<i>Sole claro</i>	40264 39224	21.	55.	53	21.	56.	13	30.	51		21.	40.	47

Jun.

		Tangen tes cor re ctæ a pe numbra	Dist. a vertice apparens limborum	Dist. a vertice vera lim borum	Diam. app. Solis	Dist. a vertice vera cen tri
			G I II	G I II	I II	G I II
1695						
Jun. 8	Sole claro specie tremula	40078 39038	21.50.34 21.19.29	21.50.44 21.19.48	30.56	21.35.16
Jun. 9	Sole claro	39909 38872	21.45.23 21.14.33	21.45.43 21.14.52	30.52	21.30.17
Jun. 17	Sole claro	39032 38003	21.19.19 20.48.30	21.19.38 20.48.49	30.49	21. 4.13
Jun. 18	Sole claro, & consentit MS. Uccelli	38986 37951	21.17.57 20.46.56	21.18.16 20.47.15	31. 1	21. 2.45
Jun. 19	Sole claro consentit MS. Uccelli	38950 37916	21.16.52 20.45.53	21.17.11 20.46.12	30.59	21. 1.42
Jun. 20	In advers. tangentes incor rectæ 38973, 37847 Sole claro, unde correctæ 38923, 37897, sed in libello supputationum postquam has ipsas tangentes consignavit hæc notat: eadem correctæ per diligentem ob servationem factam a D. Uccel lo super vestigiis marginum sa lutarum, & a me repetita die sequenti 38979, 37851; e quibus deducuntur tangentes correctæ quales in seriem re tuli, & consentit MS. Uc celli	38929 37901	21.16.14 20.45.26	21.16.33 20.45.45	30.48	21. 1. 9

Jun.

1695		Tangen- tes cor- dæ a pe- numbra	Dist. a vertice apparens limborum		Dist. a vertice vera lim- borum		Diam. app. Solis		Dist. a vertice vera cen- tri	
			G	I	G	I	I	I	G	I
Jun. 21	ex advers. Gul. Sol haberi non potuit in meridie propter nubes, sed cum pallidus appa- reret post merid., ejus specie adhue existente in marmore o- rientali Solstitii, notatus est uterque limbus, & per signa ductæ sunt perpendiculares ad lineam, quæ dederunt tangen- tes meridianas; sine errore au- tem possunt referri signa notata ad lineam, cum veri observa- verim limbum percurrere diu lineam meridianam perpendicu- larem. Consentit MS. Uccelli	389 ¹⁰ 379 ¹⁹	21.15.40 20.45.59	21.15.59 20.46.18	29.41	21. 1. 9				
Jun. 22	ex advers. Guliel. Sole claro	389 ³⁸ 379 ⁰⁸	21.16.30 20.45.38	21.16.49 20.45.57	30.52	21. 1. 23				
Jun. 23	ibid. Cælo nubilo specie tre- mula, & subdit: marmor can- gentis majoris est humilior debito 7 particulis, ideoque corrigi debuit per subtractio- nem 3 particularum	389 ⁵⁶ 379 ²²	21.17. 3 20.46. 5	21.17.22 20.46.24	30.58	21. 1. 53				
Jun. 24	Sole pallido cælo nubilofo	389 ⁹⁶ 379 ⁶⁵	21.18.15 20.47.21	21.18.35 20.47.40	30.55	21. 3. 7				
Jun. 25	Sole claro	390 ⁴³ 380 ⁰⁹	21.19.38 20.48.42	21.19.58 20.49. 1	30.57	21. 4. 29				
Jun. 26	Sole claro	391 ⁰⁶ 380 ⁷⁰	21.21.31 20.50.30	21.21.50 20.50.49	31. 1	21. 6. 19				
Jun. 27	Sole claro	391 ⁸⁵ 381 ⁴⁹	21.23.51 20.52.54	21.24.11 20.53.13	30.38	21. 8. 32				
Jul. 4	Sole claro	401 ¹¹ 390 ⁷⁷	21.51.23 21.20.40	21.51.43 21.20.59	30.44	21.36.21				

Jul.

1695		Tangen- tes cor- de a pe- numbra	Diff. a vertice apparentis limborum		Diff. a vertice vera lim- borum		Diam. app. Solis		Diff. a vertice vera cen- tri	
			G	I II	G	I II	I II		G	I II
Jul. 5	ex libello supputationum Gul. Sole ut supra	40294 39257	21.56.48 21.26.1		21.57.8 21.26.21		30.47		21.41.45	
Jul. 6	ex advers. Sole pallido	40497 39472	22.2.48 21.32.24		22.3.8 21.32.44		30.24		21.47.56	
Jul. 7	Sole claro	40718 39678	22.9.20 21.38.32		22.9.40 21.38.52		30.48		21.54.16	
Jul. 9	Sole claro	41186 40147	22.23.6 21.52.26		22.23.26 21.52.46		30.40		22.8.6	
Jul. 11	Sole claro	41709 40665	22.38.26 22.7.45		22.38.47 22.8.5		30.42		22.23.26	
Jul. 13	Sole claro. Consentit MS. Uccelli hoc, & sequentibus diebus	42289 41233	22.55.23 22.24.28		22.55.44 22.24.48		30.56		22.40.16	
Jul. 14	Sole claro	42600 41547	23.4.26 22.33.42		23.4.47 22.34.3		30.44		22.49.25	
Jul. 15	Sole claro D. Uccellus	42916 41863	23.13.39 22.42.56		23.14.0 22.43.17		30.43		22.58.38	
Jul. 16	Sole claro D. Uccellus	43260 42202	23.23.36 22.52.51		23.23.57 22.53.12		30.45		23.8.34	
Jul. 18	Sole claro D. Uccellus	43970 42900	23.44.7 23.13.11		23.44.29 23.13.32		30.57		23.29.0	
Jul. 19	Sole claro	44347 43279	23.54.58 23.24.12		23.55.20 23.24.33		30.47		23.39.56	
Jul. 20	Sole clarissimo	44742 43668	24.6.17 23.35.24		24.6.39 23.36.6		30.33		23.51.22	
Jul. 22	Sole clarissimo ego cum D. Uccello	45556 44467	24.29.31 23.58.24		24.29.53 23.58.44		31.9		24.14.18	
Jul. 23	D. Uccellus	45991 44909	24.41.53 24.11.5		24.42.16 24.11.27		30.49		24.26.51	

Jul.

1695		Tangen- tes cor- ræ a pe- numbra	Diff. a vertice apparentis limborum		Diff. a vertice vera lim- borum		Diam. app. Solis		Diff. a vertice vera cen- tri	
			G	I II	G	I II	I II		G	I II
Jul. 24	Sole claro ego cum D. Uccello	46430 45339	24.54.21 24.23.21		24.54.44 24.23.43		31. 1		24.39.13	
Jul. 25	Sole claro Uccellus	46891 45797	25. 7.21 24.36.23		25. 7.44 24.36.46		30.58		24.52.15	
Jul. 28	Sole claro	48336 47236	25.47.50 25.17. 3		25.48.14 25.17.26		30.48		25.32.50	
Jul. 30	Sole claro	49372 48250	26.16.36 25.45.26		26.17. 0 25.45.50		31.10		26. 1.25	
Aug. 1	Sole claro	50451 49324	26.46.18 26.15.17		26.46.44 26.15.41		31. 3		26.31.12	
Aug. 2	Sole claro	51018 49887	27. 1.48 26.30.48		27. 2.14 26.31.13		31. 1		26.46.43	
Aufst. 3	Sole claro	51591 50451	27.17.23 26.46.18		27.17.49 26.46.43		31. 6		27. 2.16	
Aug. 4	Sole claro	52176 51036	27.33.13 27. 2.17		27.33.40 27. 2.43		30.57		27.18.11	
Aug. 5	Sole claro	52776 51632	27.49.24 27.18.30		27.49.51 27.18.56		30.55		27.34.23	
Aug. 6	Sole claro	53393 52245	28. 5.56 27.35. 6		28. 6.23 27.35.33		30.50		27.50.58	
Aug. 7	Sole claro. In MS. Uccelli limbus sup. 52867	54020 52866	28.22.40 27.51.49		28.23. 7 27.52.16		30.51		28. 7.41	
Aug. 9	Sole claro	55328 54148	28.57. 2 28.26. 5		28.57.30 28.26.32		30.58		28.42. 1	
Aug. 12	Sole pallidiusculo specie tre- mula	57371 56178	29.50.37 29.19.37		29.51. 6 29.20. 5		31. 1		29.35.35	
Aug. 13	Sole pallido specie tremula. Sed in MS. Uccelli 58076, 56884	58078 56886	30. 8.51 29.38. 2		30. 9.20 29.38.31		30.49		29.53.55	

Aug.

1695		Tangen- tes cor- dæ a pe- numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis		Diff. a vertice vera cen- tri	
			G	I II	G	I II	I II		G	I II
Aug. 14	<i>Sole claro</i>	58808 57598	30.27.32 29.56.28		30.28.1 29.56.57		31. 4		30.12.29	
Aug. 16	ex adversariis Guliel., & MS. Uccelli <i>Sole pallidiusculo</i> <i>specie tremula</i>	60287 59065	31. 5. 5 30.34. 6		31. 5.35 30.34.36		30.59		30.50. 5	
Aug. 17	ex iisdem utrisque <i>Sole claro</i>	61052 59831	31.24.18 30.53.33		31.24.49 30.54. 3		30.46		31. 9.26	
Aug. 18	ex advers. Gul. <i>calo nubilo</i> <i>specie tremula incerta</i> . In MS. autem Uccelli limbus sup. 60577	61844 60578	31.44. 3 31.12.24		31.44.35 31.12.54		31.41		31.28.44	
Aug. 19	ex utrisque <i>Sole claro ec.</i>	62621 61369	32. 3.19 31.32.13		32. 3.51 31.32.44		31. 7		31.48.17	
Aug. 20	<i>Sole claro</i>	63433 62176	32.23.18 31.52.18		32.23.50 31.52.50		31. 0		32. 8.20	
Aug. 21	<i>Sole claro</i>	64240 62974	32.43. 0 32.12. 1		32.43.33 32.12.33		31. 0		32.28. 3	
Aug. 23	ex advers. Gul. <i>Sole claro</i>	65924 64635	33.23.41 32.52.37		33.24.15 32.53.10		31. 5		33. 8.42	
Aug. 24	<i>Sole claro</i>	66780 65482	33.44. 6 33.13. 4		33.44.41 33.13.37		31. 4		33.29. 9	
Aug. 26	<i>Sole claro</i>	68548 67222	34.25.48 33.54.36		34.26.23 33.55.11		31.12		34.10.47	
Aug. 27	<i>Sole claro</i>	69452 68115	34.46.52 34.15.39		34.47.28 34.16.14		31.14		34.31.51	
Aug. 28	<i>Sole pallidissimo</i>	70352 69027	35. 7.38 34.36.58		35. 8.14 34.37.34		30.40		34.52.54	
Aug. 29	<i>Sole claro</i>	71312 69950	35.29.37 34.58.23		35.30.13 34.58.59		31.14		35.14.36	
Aug. 30	<i>Sole pallidiusculo</i>	72264 70890	35.51.12 35.19.59		35.51.49 35.20.35		31.14		35.36.12	

Y

Sept.

1695		Tangen tes cor- re & a pe numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G ° 11	G ° 11	1 11	G ° 11	1 11
Sept. 2	<i>Sole pallidissimo specke firma</i>	75197 73801	36.56.32 36.25.40	36.57.11 36.26.18	30.53	36.42.44
Sept. 4	<i>Sole claro. Consentunt ho- die & deinceps Uccelli MSS.</i>	77239 75799	37.40.57 37. 9.44	37.41.37 37.10.23	31.14	37.26. 0
Sept. 5	<i>Sole claro</i>	78283 76830	38. 3.18 37.32. 6	38. 3.59 37.32.46	31.13	37.48.22
Sept. 6	<i>Sole claro</i>	79333 77869	38.25.35 37.55.29	38.26.17 37.55.10	31. 7	38.10.43
Sept. 8	<i>Sole claro</i>	81495 79992	39.10.43 38.39.25	39.11.26 38.40. 8	31.18	38.55.47
Sept. 9	<i>Sole pallido</i>	82594 81094	39.33.17 39. 2.24	39.34. 1 39. 3. 7	30.54	39.18.34
Sept. 10	<i>Sole claro</i>	83720 82190	39.56.10 39.25. 0	39.56.54 39.25.43	31.11	39.41.18
Sept. 12	<i>Sole in puncto meridie eva- nescente incertissima</i>	86011 84464	40.41.57 40.11. 9	40.42.43 40.11.55	30.50	40.27.18
Sept. 13	<i>Sole pallidissimo</i>	87147 85625	41. 4.16 40.34.19	41. 5. 2 40.35. 4	30.58	40.50.33
Sept. 14	<i>Sole claro</i>	88384 86778	41.28.17 40.57. 2	41.29. 3 40.57.48	31.15	41.13.25
Sept. 17	<i>Sole claro</i>	92057 90383	42.37.54 42. 6.27	42.38.42 42. 7.11	31.28	42.22.58
Sept. 21	<i>Sole pallido</i>	97220 95465	44.11.33 43.40.16	44.12.24 43.41. 6	31.28	43.56.45
Sept. 22	<i>Sole pallido</i>	98538 96768	44.34.41 44. 3.33	44.35.34 44. 4.24	31.10	44.19.59

Sept.

		Tangen- tes corre- ctæ a pe- nombra	Diff. a vertice apparens limborum			Diff. a vertice veralem borum			Diam. app. Sollis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
1695														
Sept. 23	ex iisdem utrisque Sole claro Hac nocte ex advers. Guliel. Luna appulit ad meridianum hora p. m. 12. 54. 41 horolo- gii correcti. Tangentes in Gnomone D. Petronii incor- rectæ 68886, 67476	99903 98083	44.38.21			44.59.13			31.38			44.43.24		
			44.26.44			44.27.35								
Sept. 24	Sole pallido	101268 99437	45.21.40			45.22.13			31.3			45.6.41		
			44.50.18			44.51.10								
Sept. 25	Sole claro	102667 100811	45.45.15			45.46.9			31.24			45.30.27		
			45.13.53			45.14.45								
Sept. 26	Sole claro	104070 102193	46.8.34			46.9.28			31.18			45.53.49		
			45.37.17			45.38.10								
Sept. 27	Sole claro	105498 103592	46.31.59			46.32.54			31.21			46.17.13		
			46.0.39			46.1.33								
Sept. 28	Sole claro	106965 105014	46.55.39			46.56.35			31.36			46.40.47		
			46.24.4			46.24.59								
Oct. 6	ex advers. Gul. Sole pallido. Limbi infer. tangens notatur in hisce adversariis incorr. 119331 cui subditur 119346; sed in libello supputationum usurpat ut veriore 119346, quam propterea retinendam censui, estque correctæ 119296	119296 117110	50.1.43			50.2.45			31.21			49.47.4		
			49.30.23			49.31.24								
Oct. 7	Sole claro	120950 118712	50.25.0			50.26.3			31.36			50.10.15		
			49.53.25			49.54.27								
Oct. 8	Sole claro	122606 120333	50.47.55			50.48.59			31.36			50.33.11		
			50.16.21			50.17.23								
Oct. 9	Sole pallidissimo	124280 121968	51.10.44			51.11.48			31.37			50.55.59		
			50.39.8			50.40.11								
Oct. 24	Sole pallidissimo	152066 149067	56.40.14			56.41.35			31.34			56.25.48		
			56.8.41			56.10.1								

1695		Tangen tes corre ctæ a pe numbra	Dist. a vertice apparens limborum		Dist. a vertice vera lim borum		Diam. app. Solis		Dist. a vertice vera cen tri	
			G	I II	G	I II	I	II	G	I II
Oct. 28	<i>Sole claro, specie tremula cum D. Cassino</i>	160298 157025	58. 2.34	57.30.34	58. 4. 0	57.31.38	32. 2		57.47.59	
Nov. 2		170935 167284	59.40.18	59. 7.47	59.41.51	59. 9.17	32.34		59.25.34	
Nov. 7	<i>Sole claro</i>	181827 177906	61.11.26	60.39.36	61.13. 5	60.41.13	31.52		60.57. 9	
Nov. 10	<i>Sole claro. Hanc observa tionem a se cum Gulielmino habitam refert etiam Jacobus Cassinus in itinere Italico quod extat in libro 7 monu mentorū Regiæ Academiæ Parisiensis, edito anno 1729</i>	188484 184320	62. 3. 7	61.31. 8	62. 4.49	61.32.48	32. 1		61.48.48	
Nov. 13	<i>Sole pallido</i>	195091 190744	62.51.40	62.20. 2	62.53.25	62.21.45	31.40		62.37.35	
Nov. 16	<i>Sole claro</i>	201738 197100	63.37.58	63. 5.55	63.39.47	63. 7.41	32. 6		63.23.44	
Nov. 17	<i>Sole claro</i>	203915 199206	63.52.36	63.20.38	63.54.26	63.22.25	32. 1		63.38.25	
Nov. 18	<i>Sole claro</i>	206092 201286	64. 7. 0	63.34.54	64. 8.51	63.36.43	32. 8		63.52.47	
Nov. 19	<i>D. Cassinus. incerta</i>	208208 203362	64.20.44	63.48.54	64.22.37	63.50.45	31.52		64. 6.41	
Nov. 21	<i>Sole claro</i>	212485 207451	64.47.51	64.15.51	64.49.47	64.17.43	32. 4		64.33.45	
Nov. 23		214558 209435	65. 0.40	64.28.36	65. 2.37	64.30.35	32. 7		64.46.33	
Nov. 24		218641 213368	65.25.20	64.53.20	65.27.19	64.55.17	32. 2		65.11.18	

Dec.

1695		Tangen tes corre cta ap numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Sollis	Diff. a vertice vera cen tri
		G I II	G I II	G I II	G I II	
Dec. 2	ex adverf. Gul. <i>Sole claro</i> . Consentit MS. Uccelli. Gu lielminus porro in supputa tionibus addit minori tan genti particulas 100 subdens: <i>tangens minor correctæ est ad ditis 100 particulis, nam dia meter foret nimis magna</i>	233535 227416	66.49.10 66.15.50	66.51.18 66.17.54	33.24	
Dec. 16	ex adverf. Gul. <i>Sole pallido</i> . Tangens minor incorrecta est 242223, sed illi subscripta 242210 cum hac nota verior. Adjecta est etiam tangentium incorrectarum differentia 6628, quæ ostendit Gulielminum hac postremam tangentem potiorem habuisse	248788 242260	68. 6. 9 67.34.12	68. 8.26 67.36.25	32. 1	67.52.25
Dec. 21	<i>Sole pallidissimo caelo nebuloso</i>	250000 243480	68.11.55 67.40.17	68.14.11 67.42.30	31.41	67.58.20
Dec. 29	<i>Sole pallido caelo nubilo, sed exacta quoad determinationem limborum, & consentit MS. Uccelli</i>	246937 240443	67.57.14 67.25. 4	67.59.30 67.27.16	32.14	67.43.23
1696						
Jan. 1	ex adversariis Guliel. <i>Sole pallido caelo nubilo, sed satis exacta in MS. Uccelli tangens limbi sup. deficit ab hac par ticula una</i>	244198 237821	67.43.51 67.11.38	67.46. 5 67.13.48	32.17	67.29.56
Jan. 7	ex iisdem adverf. <i>Sole claro</i>	236525 230510	67. 4.55 66.32.52	67. 7. 4 66.34.58	32. 6	66.51. 1
Jan. 9	ex iisdem <i>Sole pallido</i>	232412 227512	66.48.30 66.16.22	66.50.37 66.18.26	32.21	66.34.31

Jan.

		Tangen tes corre ctæ a pe numbra	Diffr. a vertice apparens limborum			Diffr. a vertice vera lim borum			Diam. app. Solis			Diffr. a vertice vera cen tri		
			G	I	II	G	I	II	I	II		G	I	II
1696														
Jan. 10	Sole pallido	231735 225939	66.39.31 66. 7.34			66.41.37 66. 9.37			32. 0			66.25.37		
Jan. 11	Sole pallidissimo	229997 224278	66.30. 4 65.58. 9			66.32.10 66. 0.12			31.58			66.16.11		
Jan. 13	Sole claro	226424 220819	66.10.17 65.38.10			66.12.21 65.40.10			32.11			65.56.15		
Jan. 15	Sole clarissimo exatissima	222633 217197	65.48.43 65.16. 6			65.49.44 65.18. 5			31.39			65.33.54		
Jan. 18	Sole claro	216637 211444	65.13.23 64.41.20			65.15.22 64.43.15			32. 7			64.59.18		
Jan. 19	Sole claro	214566 209472	65. 0.43 64.28.50			65. 2.40 64.30.44			31.56			64.46.42		
Jan. 20	Sole claro	212476 207464	64.47.47 64.15.56			64.49.42 64.17.48			31.54			64.33.45		
Jan. 21	Sole clarissimo	210363 205432	64.34.30 64. 2.39			64.36.24 64. 4.30			31.54			64.20.27		
Jan. 23	Sole claro, specie admodum tremula	206091 201280	64. 6.59 63.34.51			64. 8.50 63.36.40			32.10			63.52.45		
Jan. 24	Sole claro celo sereno specie præter morem tremula	203890 199197	63.52.26 63.20.34			63.54.16 63.22.22			31.54			63.38.19		
Jan. 26	Sole claro etc.	199532 194931	63.22.53 62.50.32			63.24.41 62.52.17			32.24			63. 8.29		
Jan. 27	Sole claro consentit MS. Ucelli	197289 192811	63. 7.16 62.35.13			63. 9. 2 62.36.57			32. 5			62.52.59		
Jan. 28	Sole claro exacta	195041 190665	62.51.19 62.19.26			62.53. 4 62.21. 9			31.55			62.37. 6		
Jan. 29	Sole claro. Sed Ucellus dat limbum inf. 192835	192825 188498	62.35.19 62. 3.13			62.37. 3 62. 4.55			32. 8			62.20.59		

Feb.

		Tangen tes cor dæ ape numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim borum			Diam. app. Solis			Diff. a vertice vera cen tri		
			G	I	II	G	I	II	I	II	III	G	I	II
1696														
Feb. 1	ex adversariis Gulielmini. Sole pallido. Consentiant MSS. Uccelli	186128 182050	61.45.9	61.46.49	61.13.13	61.14.52			31.57			61.30.50		
Feb. 3	Sole pallidissimo marginibus speciei vix apparentibus. Con sentit Uccellus	183917 179923	61.27.58	61.29.38	60.56.6	60.57.44			31.54			61.13.41		
Feb. 6	Sole claro dubia ex advers. Gulielmini	175238 171322	60.17.19	60.18.54	59.43.42	59.45.15			33.39					
Feb. 7	Sole pallidissimo ut vix mar gines distinguerentur	172830 169238	59.56.47	59.58.21	59.25.19	59.26.51			31.30			59.42.36		
Feb. 8	Sole claro	170660 167112	59.37.53	59.39.25	59.6.14	59.7.44			31.41			59.23.34		
Feb. 9	Sole claro	168513 165016	59.18.51	59.20.22	58.47.3	58.48.32			31.50			59.4.27		
Feb. 12	Sole claro. Consentit Uc cellus in MS.	162110 158831	58.19.52	58.21.29	57.48.20	57.49.46			31.33			58.5.32		
Feb. 13	Sole languidissimo	160015 156714	57.59.50	58.1.16	57.27.29	57.28.55			31.23			57.44.34		
Feb. 14	Sole languido	157926 154724	57.39.28	57.40.52	57.7.30	57.8.52			32.0			57.24.52		
Feb. 19	Sole claro. Consentit Uc cellus	147773 144847	55.54.48	55.56.7	55.22.46	55.24.3			32.4			55.40.5		
Feb. 21	ut supra	143840 141050	55.11.32	55.12.47	54.39.53	54.41.7			32.40			54.56.57		
Feb. 22	ut supra	141916 139184	54.49.48	54.51.2	54.18.15	54.19.28			31.34			54.35.15		
Feb. 23	ut supra	140018 137306	54.27.57	54.29.10	53.56.3	53.57.15			31.55			54.13.12		

Feb.

1696		Tangen- tes corre- ctæ a po- numbra	Diff. a vertice apparentis limborum			Diff. a vertice vera lim- borum			Diam. app. Solis	Diff. a vertice vera cen- tri		
			G	I	II	G	I	II		G	I	II
Feb. 24	Incerta	138144 135627	54. 6. 0			54. 7. 12			30. 7	53. 52. 8		
Feb. 25	Sole claro. Consentit dein- ceps Uccellus	136266 133649	53. 43. 36			53. 44. 47			31. 54	53. 28. 50		
Feb. 26	Sole claro	134413 131842	53. 21. 7			53. 22. 18			31. 55	53. 6. 20		
Feb. 27	Sole claro	132583 130067	52. 58. 30			52. 59. 40			31. 47	52. 43. 46		
Feb. 28	Sole claro	130792 128305	52. 35. 58			52. 37. 7			31. 57	52. 21. 8		
Feb. 29	Sole claro	129005 126577	52. 13. 6			52. 14. 14			31. 43	51. 58. 22		
Mar. 1	Sole claro	127257 124856	51. 50. 38			51. 51. 45			32. 21	51. 35. 39		
Mar. 2	Sole claro ec.	125520 123171	51. 27. 25			51. 28. 30			31. 46	51. 12. 37		
Mar. 4	Sole claro	122131 119832	50. 41. 23			50. 42. 24			32. 3	50. 26. 22		
Mar. 5	Sole claro	120445 118209	50. 17. 56			50. 18. 58			31. 44	50. 3. 6		
Mar. 6	Sole claro. Gul. habet pro limbo sup. 116404. Sed Uc- cellus 116604, quod puto verius	118794 116604	49. 54. 34			49. 55. 36			31. 34	49. 39. 49		
Mar. 7	Sole claro	117172 115010	49. 31. 17			49. 32. 18			31. 41	49. 16. 27		
Mar. 8	Sole claro	115577 113453	49. 7. 59			49. 8. 59			31. 37	48. 53. 10		
Mar. 9	Sole claro	113997 111906	48. 44. 32			48. 45. 32			31. 37	48. 29. 43		

Mar.

		Tangen tes cor re ctæ a pe numbra	Diff. a vertice apparenti limborum		Diff. a vertice vera lim borum		Diam. app. Solis		Diff. a vertice vera cen tri	
			G	°	G	°	1	11	G	°
1696										
Mar. 12	ex adversariis Gulielmi. <i>Sole claro</i>	109391 107388	47.34.	5	47.35.	2	31.41		47.19.	11
Mar. 13	<i>Sole claro.</i> Advers. Guliel. subduunt tangentes lunæ hac nocte observatas 53761, 54599, puto incorrectas	107881 103907	47.10.	16	47.11.	2	31.31		46.55.	16
Mar. 14	<i>Sole pallido</i>	106414 104472	46.46.	47	46.47.	42	31.37		46.31.	53
Mar. 18	<i>Sole pallido</i> nubibus inter currentibus, dubia	100692 98849	45.11.	52	45.12.	44	31.46		44.56.	51
Mar. 19	<i>Sole claro, nebula rara spe ciem intercurrente, sed exacta</i>	99322 97508	44.48.	19	44.49.	11	31.42		44.33.	20
Mar. 20	<i>Sole pallido, cælo nebuloso incerta, quoniam sumpta specie existente hinc inde a linea, nam in meridie Sol non apparuit</i>	97930 96165	44.24.	24	44.25.	15	31.36		44. 9.	27
Mar. 23	<i>Sole pallido</i>	91450 89783	42.26.	35	42.27.	23	31.29		42.21.	38
Mar. 26	<i>Sole claro</i>	90214 88555	42. 3.	18	42. 4.	5	31.42		41.48.	14
Mar. 28	<i>Sole claro</i>	87764 86171	41.16.	17	41.17.	3	31. 9		41. 1.	28
Mar. 30	<i>Sole pallido incerta eo quod Sol in meridie non apparuerit</i>	85377 83835	40.29.	24	40.30.	9	30.56		40.14.	41
Apr. 2	<i>Sole pallidissimo incerta</i>	81961 80488	39.20.	10	39.21.	2	30.31		39. 6.	46
Apr. 6	<i>Sole pallido cælo nubilo</i>	77652 76196	37.49.	40	37.50.	30	31.28		37.34.	46

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Apr.

		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
1696			G 1 1	G 1 11	1 11	G 1 11
Apr. 13	Sole pallido cælo nubilo spe cie tremula	70693 69347	35.15.28 34.44.25	35.16. 4 34.45. 1	31. 3	35. 0.32
Apr. 14	Sole claro	69770 68416	34.54.14 34.22.43	34.54.50 34.23.18	31.32	34.39. 4
Apr. 15	Sole pallidissimo cælo nubilo. In adversariis sic habet, sub ditque dubia quoad tangentem minorem; in libello autem supputationum consignat hæc tangentem incorrectā 67451 quæ correctæ foret 67501, & addit dubia quoad limbum minorem. Uccellus in MS. habet 67480 incorr., seu 67530 correct.	68824 67510	34.32.25 34. 1.24	34.32.51 34. 1.59	30.52	34.17.25
Apr. 20	Sole pallido	64494 63209	32.49.10 32.17.48	32.49.43 32.18.20	31.23	32.34. 1
Apr. 21	Sole claro cælo nubilo specie aliquatenus tremula, sed exacta	63670 62387	32.29. 6 31.57.31	32.29.38 31.58. 3	31.35	32.13.50
Apr. 23	Sole claro	62045 60800	31.49. 4 31.17.59	31.49.36 31.18.30	31. 6	31.34. 3
Apr. 24	Sole pallido	61265 60020	31.29.37 30.58.20	31.30. 7 30.58.50	31.17	31.14.28
Apr. 29	Sole pallido cælo nubilo in certa quoniam facta Sole ad meridianum nondum appulso, & centro speciei intra marmora consistente	57537 56333	29.54.54 29.23.38	29.55.13 29.24. 6	31. 7	29.39.39
Apr. 30	Sole clarissimo. Consentit Uccellus	56828 55630	29.36.32 29. 5.14	29.37. 1 29. 5.42	31.19	29.21.21

Maj.

1696		Tangen- tes cor- re- ctæ a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Sollis	Diff. a vertice vera cen- tri
			G 1 11	G 1 11	1 11	G 1 11
Maj. 1	<i>Sole claro celo nubilo incerta</i> Consentit Uccellus	56142 54957	29.18.40 28.47.32	29.19. 8 28.48. 0	31. 8	29. 3.34
Maj. 2	<i>Sole claro celo sereno specie</i> <i>tremula exalta.</i> Consentit MS. Uccelli hodie & deinceps	55462 54283	29. 0.49 28.29.40	29. 1.17 28.30. 7	31.10	28.45.42
Maj. 3	<i>Sole claro</i>	54801 53619	28.43.24 28.12. 0	28.43.52 28.12.27	31.25	28.28. 9
Maj. 4	<i>Sole claro.</i> in advers. tangenti minori subscripta est alia 7 particulis major, sed in sup- putationibus hac utitur quan- designavi & cum hac con- sentit Uccellus	54146 52985	28.26. 2 27.54.58	28.26.29 27.55.25	31. 4	28.10.57
Maj. 5	<i>Sole claro</i>	53512 52355	28. 9. 6 27.38. 5	28. 9.33 27.38.32	31. 1	27.54. 2
Maj. 6	<i>Sole claro</i>	52892 51741	27.52.31 27.21.28	27.52.59 27.21.54	31. 5	27.37.26
Maj. 7	<i>Sole pallido, celo nubilo</i> <i>specie tremula</i>	52287 51136	27.36.14 27. 5. 0	27.36.41 27. 5.26	31.15	27.21. 3
Maj. 8	<i>Sole claro</i>	51684 50551	27.19.55 26.49. 2	27.20.21 26.49 28	30.53	27. 4.54
Maj. 9	<i>Sole claro</i>	51106 49974	27. 4.12 26.33.12	27. 4.38 26.33.37	31. 1	26.49. 7
Maj. 10	<i>Sole claro</i>	50538 49410	26.48.41 26.17.39	26.49. 7 26.18. 4	31. 3	26.33.35
Maj. 11	<i>Sole pallidiusculo</i>	49991 48859	26.32.40 26. 2.24	26.34. 5 26. 2.45	31.17	26.18.26
Maj. 12	<i>Sole ut supra</i>	49451 48326	26.18.47 25.47.34	26.19.11 25.47.58	31.23	26. 3.34

		Tangen tes corre ctæ a pe numbra	Diff. a vertice opparens limborum			Diff. a vertice vera lim borum			Diam. app. Solis			Diff. a vertice vera cen tri		
			G	I	II	G	I	II	I	II		G	I	II
1696														
Maj. 13	Sole ut supra	48920 47806	26.	4.	6	26.	4.	30	31.	3		25.	48.	58
Maj. 14	Sole pallido	48408 47297	25.	49.	51	25.	50.	15	31.	5		25.	34.	42
Maj. 16	Sole claro	47421 46317	25.	22.	15	25.	22.	38	31.	6		25.	7.	5
Maj. 17	Sole claro	46947 45850	25.	8.	54	25.	9.	17	31.	0		24.	53.	47
Maj. 18	Sole ut supra	46478 45390	24.	55.	40	24.	56.	3	30.	53		24.	40.	36
Maj. 19	Sole ut supra	46042 44956	24.	43.	21	20.	43.	44	30.	57		24.	28.	15
Maj. 20	Incerta propter observatorem	45597 44522	24.	30.	42	24.	31.	4	30.	42		24.	15.	43
Maj. 21	Sole pallidissimo	45178 44121	24.	18.	46	24.	19.	8	30.	28		24.	3.	59
Maj. 22	Sole claro	44781 43701	24.	7.	24	24.	7.	46	30.	59		23.	52.	16
Maj. 23	Sole ut supra	44386 43314	23.	56.	5	23.	56.	27	30.	56		23.	40.	59
Jun. 1	Sole claro	41465 40409	22.	31.	18	22.	31.	39	31.	7		22.	16.	5
Jun. 2	Sole ut supra	41205 40160	22.	23.	39	22.	23.	59	30.	49		22.	8.	34
Jun. 3	Sole ut supra	40958 39914	22.	16.	23	22.	16.	43	30.	51		22.	1.	17
Jun. 4	Sole claro. Consentit Ucellus	40732 39684	22.	9.	44	22.	10.	4	31.	2		21.	54.	33
Jun. 5	Sole pallido	40507 39474	22.	3.	5	22.	3.	25	30.	37		21.	48.	6

Jun.

		Tangen- tes cor- de a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
1696			G 1 11	G 1 11	1 11	3 1 11
Jun. 6	ex adverb. Guliel. Sole claro consentit Uccellus ec.	40314 39275	21.57.23 21.26.32	21.57.43 21.26.51	31.52	21.42.47
Jun. 7	Sole pallidissimo, & specie vix apparente	40114 39128	21.51.28 21.22.11	21.51.48 21.22.30	29.18	21.37. 9
Jun. 8	Sole pallido, incerta quoniam sumpta per normales extra li- neam	39950 38906	21.46.37 21.15.34	21.46.57 21.15.53	31. 4	21.31.25
Jun. 11	Sole pallidiusculo. Guliel. ad majorem tangentem notat incerta ad minorem autem verior	39511 38463	21.33.35 21. 2.18	21.33.55 21. 2.37	30.18	21.17.46
Jun. 12	Sole pallidiusculo	39367 38375	21.29.18 20.59.40	21.29.37 20.59.59	29.38	21.14.48
Jun. 14	Sole claro	39188 38158	21.23.58 20.53. 9	21.24.17 20.53.28	30.49	21. 9.12
Jun. 15	Sole ut supra	39114 38076	21.21.47 20.50.42	21.22. 6 20.51. 1	31. 5	21. 6.33
Jun. 16	Sole ut supra, & subdit ego ad fui abbin	39051 38006	21.19.52 20.48.36	21.20.11 20.48.55	31.16	21. 4.33
Jun. 17	Sole ut supra	38994 37957	21.18.11 20.47. 8	21.18.30 20.47.27	31. 3	21. 2.58
Jun. 18	Sole pallidissimo dubia	38959 37921	21.17. 9 20.46. 4	21.17.28 20.46.23	31. 5	21. 1.55
Jun. 20	Sole claro caelo nubilo	38920 37889	21.15.58 20.45. 5	21.16.17 20.45.24	30.53	21. 0.50
Jun. 21	Sole claro, caelo sereno, specie tremula	38930 37900	21.16.16 20.45.24	21.16.35 20.45.43	30.52	21. 1. 9
Jun. 22	Sole ut supra	38950 37915	21.16.52 20.45.51	21.17.11 20.46.10	31. 1	21. 1.40

Jun.

1696		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim borum			Diam. app. Solis			Diff. a vertice vera cen tri		
			G	I	II	G	I	II	I	II		G	I	II
Jun. 23	ex advers. Guliel. Sole claro. Consentit MS. Uccelli	38991 37952	21.18.	6		21.18.25 20.47.17			31.8			21.2.51		
Jun. 24	Sole claro. In MS. Uccelli utraque tangens minor est una particula	39037 37996	21.19.28 20.48.19			21.19.47 20.48.38			31.9			21.4.13		
Jun. 26	Sole claro	39167 38132	21.23.20 20.52.23			21.23.39 20.52.42			30.57			21.8.10		
Jun. 27	Sole pallidissimo	39252 38229	21.25.51 20.55.28			21.26.10 20.55.37			30.53			21.10.14		
Jun. 28	Sole claro	39366 38320	21.29.16 20.58.0			21.29.35 20.58.19			31.16			21.13.57		
Jun. 29	Sole pallidiusculo	39472 38430	21.32.25 21. 1.19			21.32.44 21. 1.38			31.6			21.17.11		
Jun. 30	Sole claro	39603 38567	21.36.19 21. 5.25			21.36.38 21. 5.44			30.54			21.21.11		
Jul. 3	Sole claro	40076 39028	21.50.21 21.19.12			21.50.41 21. 9.31			31.10			21.35.6		
Jul. 4	Sole claro	40261 39220	21.55.50 21.24.54			21.56.10 21.25.13			30.57			21.40.41		
Jul. 6	Sole claro	40661 39618	22. 7.38 21.36.46			22. 7.58 21.37. 5			30.53			21.52.31		
Jul. 9	Sole claro	41380 40332	22.28.48 21.57.53			22.29. 8 21.58.15			31.53			22.14.11		
Jul. 10	Sole claro	41651 40596	22.36.44 22. 5.43			22.37. 5 22. 6. 3			31.2			22.21.34		
Jul. 11	Sole ut supra	41928 40871	22.44.51 22.13.49			22.45.22 22.14. 9			31.13			22.29.45		
Jul. 13	Sole claro	42525 41466	23. 2.16 22.31.19			23. 2.37 22.31.40			30.57			22.47. 8		

Jul.

1696		Tangen tes cor- ræ a pe- numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis	Diff. a vertice vera cen- tri	
			G	I II	G	I II		G	I II
Jul. 14	ex adverf. Gul. Sole claro. Consentit MS. Uccelli.	42847 41787	23.11.37 23.40.43		23.11.58 22.41. 4		30.54	22.56.32	
Jul. 15	Sole claro	43286 42112	23.21.29 22.50.14		23.22.10 22.50.35		31.35	23. 6.22	
Jul. 16	Sole claro	43533 42458	23.31.28 23. 0.19		23.31.49 23. 0.40		31. 9	23.16.14	
Jul. 17	Sole pallido	43875 42823	23.41.22 23.10.55		23.41.44 23.11.16		30.28	23.26.30	
Jul. 18	Sole claro	44257 43187	23.52.23 23.21.30		23.52.45 23.21.51		30.54	23.37.18	
Jul. 19	Sole ut supra	44642 43570	24. 3.26 23.31.34		24. 3.48 23.32.56		30.52	23.48.22	
Jul. 20	Sole ut supra	45045 43966	24.14.58 23.44. 0		24.15.20 23.44.22		30.58	23.59.51	
Jul. 21	Sole claro	45457 44379	24.26.43 23.55.51		24.27. 5 23.56.13		30.52	24.11.19	
Jul. 22	Sole claro	45882 44799	24.38.48 24. 7.55		24.39.11 24. 8.17		30.54	24.22.44	
Jul. 23	Sole pallidiusculo cælo ne- buloso specie firma	46321 45239	24.51.15 24.20.29		24.51.38 24.20.51		30.47	24.36.15	
Jul. 24	Sole pallidiusculo	46777 45687	25. 4. 7 24.33.15		25. 4.30 24.33.38		30.52	24.49. 4	
Jul. 30	Sole claro	49775 48654	26.27.43 25.56.43		26.28. 7 27.57. 7		31. 0	26.12.37	
Jul. 31	Sole pallidiusculo cælo nebu- loso specie firma	50317 49203	26.42.37 26.11.56		26.43. 3 26.12.20		30.43	26.27.41	
Aug. 1	Sole claro	50880 49758	26.58. 1 26.27.15		26.58.27 26.27.40		30.47	26.43. 3	

Aug.

1696		Tangen tes cor- re a pe- numbra	Dist. a vertice apparent limborum			Dist. a vertice vera lim- borum			Diam. app. Solis			Dist. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
Aug. 3	ex advers. Guliel. Sole claro. Consentit M.S. Uccelli	52037 50891	27.29.29			27.29.55			31. 9			27.14.20		
Aug. 4	Sole claro	52638 51493	27.45.42			27.46. 9			31. 0			27.30.39		
Aug. 5	Sole pallido	53227 52101	28. 1.31			28. 1.58			30.19			27.46.48		
Aug. 8	Sole claro	55166 53998	28.53. 2			28.53.30			30.57			28.38. 1		
Aug. 9	Sole claro	55826 54652	29.10.23			29.10.51			30.55			28.55.23		
Aug. 13	Sole ut supra	58617 57423	30.22.40			30.23. 9			0.44			30. 7.47		
Aug. 14	Sole ut supra	59353 58144	30.41.26			30.41.51			30.56			30.26.21		
Aug. 15	Sole claro	60108 58883	31. 0.34			31. 1. 4			31. 4			30.45.31		
Aug. 17	Sole claro	61641 60401	31.39. 0			31.39.32			31. 5			31.23.59		
Aug. 18	Sole claro	62426 61177	31.58.30			31.59. 2			31. 5			31.43.29		
Aug. 19	Sole claro	63233 61973	32.18.24			32.18.56			31. 7			32. 3.23		
Aug. 20	Sole ut supra	64044 62778	32.38.14			32.38.47			31. 3			32.23.15		
Aug. 22	Sole pallidiusculo	65720 64432	33.18.46			33.19.20			31. 6			33. 3.47		
Aug. 23	Sole ut supra	66581 65280	33.39.22			33.39.56			31.11			33.24.20		
Aug. 29	Sole claro	72036 70659	35.46. 3			35.46.40			31.23			35.31.55		

Aug.

		Tangen tes cor- re- ctæ ap- pe- nombra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
1696														
Aug. 30	ex adverb. Gul. Sole claro. Consentit MS. Uccelli	72999 71612	36.	7.43		36.	8.22		31.18			35.52.43		
Aug. 31	Sole ut supra	73978 72579	36.29.36			36.30.14			31.18			36.14.35		
Sept. 2	Sole ut supra	73972 74562	37.13.29			37.14. 8			30.43			36.58.47		
Sept. 3	Sole ut supra	76991 75564	37.35.35			37.36.55			31. 2			37.20.44		
Sept. 4	Sole ut supra	78027 76577	37.57.50			37.58.31			31.13			37.42.54		
Sept. 5	Sole claro	79082 77622	38.20.16			38.20.57			31. 7			38. 5.23		
Sept. 6	Sole pallido	80142 78684	38.42.34			38.43.16			30.45			38.27.53		
Sept. 7	Sole claro	81232 79740	39. 5.15			39. 5.58			31. 7			38.50.24		
Sept. 8	Sole claro	82335 80815	39.25.57			39.26.40			29.21			39.11.59		
Sept. 13	Sole claro	88087 86476	41.22.33			41.23.19			31.26			41. 7.56		
Sept. 14	Sole claro D. Uccellus	89275 87669	41.45.25			41.46.12			30.59			41.30.42		
Sept. 15	Sole claro	90516 88860	42. 9. 0			42. 9.47			31.32			41.54. 1		
Sept. 16	Sole claro Bordonus	91735 90080	42.31.54			42.32.42			31.10			42.17. 7		
Sept. 17	Sole ut supra	92998 91306	42.55.20			42.56. 9			31.28			42.40.25		
Sept. 18	Sole claro	94273 92569	43.18.41			43.19.30			31.18			43. 3.51		

A a

Sept.

		Tangen tes corre ctæ a pe- numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
1696														
Sept. 19	ex advers. Gul. Sole pallido. Consentit M. S. Uccelli	95574 93846	43.42.	9		43.42.59 43.11.43			31.16			43.27.23		
Sept. 20	Sole ut supra	96886 95128	44. 5.39			44. 6.30 43.34.11			31.29			43.50.43		
Sept. 23	Sole claro	100933 99096	45.15.58			45.16.51 44.44.24			31.35			45. 1. 3		
Sept. 24	Sole claro	102311 100465	45.39.16			45.40. 9 45. 8.51			31.18			45.24.38		
Sept. 29	Sole claro	109562 107562	47.36.53			47.37.50 47. 6. 8			31.42			47.21.59		
Sept. 30	Sole claro. quæ eadem pos- trema est in manuscripto Uccelli observatio	111064 109040	48. 0. 3			48. 1. 1 47.29.32			31.29			47.45.16		
Oct. 3	ex advers. Gul. Sole claro	114133 112055	48.46.34			48.47.34 48.16.12			31.22			48.31.53		
Oct. 3	Sole ut supra	115700 113592	49. 9.47			49.10.47 48.39.28			31.29			48.55. 7		
Oct. 5	Sole pallidiusculo	118911 116722	49.56.15			49.58.17 49.24.44			32.33			49.42. 0		
Oct. 6	Sole pallidissimo	120526 118343	50.19. 4			50.20. 7 49.49. 9			30.58			50. 4.38		
Oct. 11	Sole pallidiusculo specie tre- mula	129014 126614	52.13.11			52.14.19 51.43. 0			31.19			51.58.39		
Oct. 13	Sole claro	132559 130050	52.58.12			52.59.22 52.27.40			31.42			52.43.37		
Oct. 22	Sole pallidiusculo	149583 146629	56.14.11			56.15.31 55.43.40			31.51			55.59.35		
Oct. 23	Sole ut supra	151592 148588	56.35.19			56.36.40 56. 4.53			31.47			56.20.46		

Oct.

		Tangen tes corve læ a pe nombra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera sen tri
		G 1 11	G 1 11	1 11	G 1 11	
1696						
Oct. 26	ex advers. Gul. Sole claro.	157697 154540	57.37.13 57. 5.38	57.38.37 57. 7. 0	31.37	52.22.48
Oct. 27	Sole pallidiusculo	159775 156571	57.57.30 57.26. 4	57.58.56 57.27.28	31.28	57.43.12
Nov. 2	Sole claro	172532 168947	59.54.12 59.22.43	59.55.46 59.24.14	31.32	59.40. 0
Nov. 3	Sole languido	174854 171004	60.14. 5 59.40.54	60.15.40 59.42.27	33.13	
Nov. 6	Hanc, & sequentes obser vationes ad diem 2 Augusti 1697, communicavit mihi ex propriis schedis Comes Albertus Grassius postea Bo noniæ Senator, qui cum Gu lielmino observabat, me e tiam interdum, necnon Ga briele fratre, & Stancario supplentibus, consentiuntque cum Gulielmini adversariis a me postmodum inspectis	181276 177378	61. 7. 1 60.35.14	61. 8.39 60.36.50	31.49	60.52.44
Nov. 8	Cælo serenissimo. Hac nocte tangentes meridianæ D 54792 53513 incorrectæ a penumbra	185681 181660	61.41.34 61.10. 5	61.43.15 61.11.43	31.32	61.27.29
Nov. 9	Cælo ut supra	187887 183779	61.58.35 61.26.53	62. 0.17 61.28.33	31.44	61.44.25
Nov. 10	ut supra	190124 185932	62.15.24 61.43.38	62.17. 7 61.45.18	31.49	62. 1.12
Nov. 12	Sole claro specie tremula	194556 190224	62.47.51 62.16.10	62.49.36 62.17.53	31.43	62.33.44
Nov. 13	Sole claro specie tremula	196973 192353	63. 5. 2 62.31.52	63. 6.48 62.33.36	33.12	

1696		Langen tes corre die a pe numbra	Dist. a vertice apparens limborum			Dist. a vertice vera lim borum			Diam. app. Solis		Dist. a vertice vera cen tri		
			G	I	II	G	I	II	I	II	G	I	II
Nov. 14	ex advers. Guliel. & schedis Co. Grassij Sole claro	198998 194475	63.19.11			63.20.59			31.58		63.5.0		
Nov. 15	Sole languidiusculo	201187 196587	63.34.14			63.36.2			31.58		63.20.3		
Nov. 16	Sole ut supra	203446 198814	63.49.28			63.51.18			31.35		63.35.30		
Nov. 19	Sole languidissimo	209847 204917	64.31.14			64.33.8			31.2		64.16.37		
Nov. 20	Sole languido	211964 206951	64.44.39			64.46.34			32.6		64.30.31		
Nov. 21	Sole claro	214048 208956	64.57.32			64.59.29			32.3		64.43.27		
Dec. 8	Sole languido	242787 236478	67.36.51			67.39.4			32.15		67.22.56		
Dec. 10		244928 238518	67.47.26			67.49.40			32.16		67.33.32		
Dec. 11		245868 239391	67.52.2			67.54.17			32.17		67.38.8		
Dec. 13		247434 240918	67.59.38			68.1.54			31.14		67.45.17		
Dec. 14	ad hanc diem notat Guliel. in adversariis: bucusque D. Grassius cum Manfredo	248144 241518	68.3.4			68.5.20			32.38		67.49.1		
1697													
Jan. 1	Ex schedis Com. Grassij, & Gulielm. adversariis	243323 237025	67.39.36			67.41.49			32.9		67.25.44		
Jan. 6	Sole languidissimo	236836 230762	67.6.32			67.8.41			32.21		66.52.30		

Jan.

		Tangen tes cor- re de a pe numbra	Difl. a vertice apparenti limborum	Difl. a vertice vera lim borum	Diam. app. Solis	Difl. a vertice vera cen- tri
		G ° ' "	G ° ' "	G ° ' "	G ° ' "	G ° ' "
1697						
Jan. 14	ex schedis Com. Grassij, & Gulielmini adversariis Sole languido	213072 217669	65.51.25 65.19.31	65.53.27 65.21.30	31.57	65.37.28
Jan. 16	Sole claro	219175 213863	65.28.30 64.56.23	65.30.30 64.58.20	32.10	65.14.25
Jan. 17	Sole claro	217130 217911	65.16.17 64.44.15	65.18.16 64.46.10	32. 6	65. 2.13
Jan. 24	languidissimo	202222 197765	63.41.18 63. 9.12	63.43. 7 63.11. 0	32. 7	63.27. 3
Jan. 25	Sole claro	200027 195452	63.26.17 62.54.15	63.28. 5 62.56. 1	32. 4	63.12. 3
Jan. 27	claro, caelo nubilofo	195583 191183	62.55.11 62.23.16	62.56.57 62.24.59	31.58	62.40.58
Jan. 29	optima	191084 186855	62.22.32 61.50.44	62.24.15 61.52.26	31.49	62. 8.20
Jan. 30	Claro. observatio incerta	188900 184704	62. 6.15 61.34. 7	62. 7.57 61.35.47	32.10	61.51.52
Feb. 1	Sole optimo	184426 180423	61.31.57 61. 0. 9	61.33.38 61. 1.47	31.51	61.17.42
Feb. 2	Sole claro	182212 178260	61.14.30 60.42.31	61.16. 9 60.44. 8	32. 1	61. 0. 8
Feb. 8	languido	166892 163435	59. 4.14 58.52.21	59. 5.44 58.33.49	31.55	58.49.46
Feb. 23	optima	138552 135899	54.10.49 53.39.11	54.12. 2 53.40.22	31.40	53.56.12
Feb. 24	Sole claro	136706 134082	53.48.53 53.17. 3	53.50. 4 53.18.11	31.51	53.34. 8
Feb. 25	Sole claro	134839 132277	53.26.19 52.54.40	53.27.30 52.55.50	31.40	53.11.40

Feb.

1697		Tangen tes cor- re ctæ ap- numbra	Diff. a vertice apparent limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
Feb. 26	ex schedis Co: Grassij, & Guliel. advers. Sole claro	133002 130483	53.	3.	42	53.	4.	52	31.	39		52.	49.	2
			52.	32.	4	52.	33.	13						
Feb. 27	ut supra	131193 128732	52.	41.	2	52.	42.	11	31.	29		52.	16.	27
			52.	9.	35	52.	10.	42						
Feb. 28	sublanguido	129420 126993	52.	18.	31	52.	19.	39	31.	39		52.	3.	49
			51.	46.	54	51.	48.	0						
Mar. 1	Sole claro	127656 125160	51.	55.	36	51.	56.	43	31.	44		51.	40.	51
			51.	23.	54	51.	24.	59						
Mar. 6	optima	119185 116984	50.	0.	20	50.	1.	22	31.	49		49.	45.	27
			49.	28.	32	49.	29.	33						
Mar. 8	claro	115957 113825	49.	13.	34	49.	14.	34	31.	36		48.	58.	46
			48.	41.	58	48.	42.	58						
Mar. 9	claro dubia	114381 112270	48.	50.	16	48.	51.	16	31.	48		48.	35.	22
			48.	18.	30	48.	19.	28						
Mar. 10	optimo	112803 110730	48.	16.	36	48.	17.	35	31.	43		48.	11.	43
			47.	54.	54	47.	55.	52						
Mar. 11	caelo parum nubilo	111278 109235	48.	3.	20	48.	4.	18	31.	43		47.	48.	16
			47.	31.	38	47.	32.	35						
Mar. 12	Sole languido	109741 107730	47.	39.	33	47.	40.	30	30.	39		47.	25.	10
			47.	7.	55	47.	9.	51						
Mar. 13	optima	108248 106256	47.	16.	6	47.	17.	2	31.	51		47.	1.	6
			46.	44.	15	46.	45.	11						
Mar. 14	optima	106763 104808	46.	52.	25	46.	53.	21	31.	46		46.	37.	28
			46.	20.	41	46.	21.	35						
Mar. 15	Sole claro caelo nubilo	105295 103381	46.	28.	39	46.	29.	34	31.	31		46.	13.	48
			45.	57.	9	45.	58.	3						
Mar. 27	ut supra	89280 87632	41.	45.	32	41.	46.	19	31.	49		41.	30.	24
			41.	13.	44	41.	14.	30						
Apr. 1	Sole claro caelo sereno	83387 81832	39.	49.	26	39.	50.	10	31.	48		39.	34.	16
			39.	17.	39	39.	18.	22						

Apr.

1697		Tangen- tes cor- dæ ap- numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis	Diff. a vertice vera cen- tri	
			G	I II	G	I II	I II	G	I II
Apr. 6	ex schedis Co: Grassij, & Gulielmini adverb. Sole lan- guldissimo	779 ¹² 76469	37.55.22		37.56. 3		30. 7	37.40.59	
Apr. 7	Sole claro cælo nubilo	76874 75431	37.33. 4		37.33.44		30.23	37.18.33	
Apr. 12	optima	71892 70511	35.42.51		35.43.28		31.41	35.27.37	
Apr. 13	incerta	70926 69568	35.20.47		35.21.23		31.14	35. 5.46	
Apr. 14	Sole languido	69973 68664	34.58.53		34.59.29		30.23	34.44.17	
Apr. 17	Sole claro cælo nubilo specie valde tremula	67282 65953	33.56. 0		33.56.35		31.40	33.40.43	
Apr. 18	Sole languido	66408 65095	33.35.15		33.35.49		31.33	33.20. 2	
Apr. 24	Sole claro cælo nubilo specie tremula	61452 60204	31.34.18		31.34.49		31.19	31.19. 9	
Apr. 26	Cælo sereno specie tremula	59916 58670	30.55.44		30.56.14		31.45	30.40.21	
Apr. 28	Cælo subnubilo specie tre- mula	58420 57212	30.17.37		30.18. 6		31. 7	30. 2.32	
Apr. 29	Sole claro cælo subnubilo specie tremula	57709 56490	29.59.20		29.59.49		31.37	29.44. 0	
Apr. 30	Sole claro cælo sereno specie tremula	57004 55793	29.41. 7		29.41.36		31.36	29.25.48	
Maj. 2	Sole languidissimo	55622 54448	29. 5. 2		29. 5.30		30.59	28.50. 0	
Maj. 4	Sole languido	54312 53150	28.30.26		28.30.53		30.58	28.15.24	

Maj.

1697		Tangen- tes cor- re- ctæ a pe- nombra	Diff. a vertice apparentis limborum			Diff. a vertice vera lim- borum			Diam. app. Sollis		Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	G	I	II
Maj. 7	ex schedis Co: Grassij, & Gulielmini adversariis Sole claro cælo sereno, specie tre- mula	52441 51278	27.40.23 27. 2.52			27.40.50 27. 9.18			31.32		27.25.4		
Maj. 8	ut supra	51834 50695	27.23.58 26.52.58			27.24.24 26.53.24			31. 0		27. 8.54		
Maj. 9	ut supra	51251 50131	27. 8. 9 26.37.30			27. 8.35 26.37.55			30.40		26.53.15		
Maj. 10	ut supra	50677 49543	26.52.29 26.21.20			26.52.54 26.21.45			31. 9		26.37.19		
Maj. 11	ut supra	50129 48992	26.37.27 26. 6. 5			26.37.52 26. 6.29			31.23		26.22.10		
Maj. 12	ut supra	49590 48458	26.22.37 25.51.15			26.23. 1 25.51.39			31.32		26. 7.25		
Maj. 13	ut supra	49053 47931	26. 7.45 25.36.32			26. 8. 9 25.36.56			31.13		25.52.32		
Maj. 14	Cælo ut supra specie maxime tremula	48545 47416	25.53.40 25.22. 7			25.54. 4 25.22.30			31.34		25.38.17		
Maj. 15	ut supra	48033 46921	25.39.24 25. 8.12			25.39.48 25. 8.35			31.13		25.24.11		
Maj. 16	ut supra	47542 46430	25.25.39 24.54.21			25.26. 2 24.54.44			31.28		25.10.23		
Maj. 18	Sole claro cælo nubilo specie tremula	46599 45497	24.59. 7 24.27.51			24.59.30 24.28.13			31.17		24.43.51		
Maj. 19	ut supra	41650 45057	24.46.24 24.15.18			24.46.47 24.15.40			31. 7		24.31.13		
Maj. 20	optima	45707 44622	24.33.50 24. 2.51			24.34.13 24. 3.13			31. 0		24.18.43		
Maj. 21	Sole claro ect.	45300 44196	24.22.14 23.50.37			24.22.36 23.50.59			31.37		24. 6.47		

Maj.

1697		Tangen tes cor re æpe numbra	Dist. a vertice apparens limborum	Dist. a vertice vera lim borum	Diam. app. Solis	Dist. a vertice vera cen tri
			G I II	G I II	I II	G I II
Maj. 22	ex schedis Co: Grassij, & Gul. adverb. Sole languido	44877 43800	24.10.10 23.39.13	24.10.32 23.39.35	30. 5	23.55. 4
Maj. 24	Sole claro calo sereno specie tremula	44102 43022	23.47.55 23.16.43	23.48.17 23.17. 4	31.13	23.32.40
Maj. 25	Sole claro calo nubilo specie tremula	43734 42657	23.37.19 23. 6. 7	23.37.41 23. 6.28	31.13	23.22. 4
Maj. 26	Sole clarissimo specie tremula	43373 42301	23.26.53 22.55.44	23.27.14 22.56. 5	31. 9	23.11.39
Maj. 28	Sole claro specie tremula	42705 41632	23. 7.30 22.36.11	23. 7.51 22.36.32	31.19	22.52.11
Maj. 29	ut supra	42393 41324	22.58.25 22.27. 9	22.58.46 22.27.29	31.17	22.43. 7
Jun. 2	ut supra	41267 40217	22.25.29 21.54.30	22.25.49 21.54.50	30.59	22.10.19
Jun. 3	ut supra	41020 39962	22.18.12 21.46.58	22.18.32 21.47.18	31.14	22. 2.55
Jun. 5	ut supra	40572 39520	22. 5. 0 21.33.49	22. 5. 0 21.34. 9	30.51	21.49.34
Jun. 6	ut supra	40362 39317	21.58.49 21.27.48	21.59. 9 21.28. 7	31. 2	21.43.38
Jun. 8	Sole pallidissimo incerta	3999 38936	21.47.56 21.16.27	21.48.16 21.16.46	31.30	21.32.31
Jun. 11	Sole claro specie tremula	39540 38500	21.34.26 21. 3.27	21.34.46 21. 3.46	31. 0	21.19.16
Jun. 12	Sole claro calo nubilo	39417 38375	21.30.43 20.59.40	21.31. 3 20.59.59	31. 4	21.15.31
Jun. 14	calo sereno specie maxime tremula	39210 38172	21.24.27 20.53.35	21.24.56 20.53.54	31. 2	21. 9.25

B b

Jun.

1697		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparenti limborum.			Diff. a vertice vera lim borum			Diam. app. Solis	Diff. a vertice vera cen tri		
			G	I	II	G	I	II		G	I	II
Jun. 15	ex schedis Co: Grassij, & Guliel. advers. calo sereno specie maxime tremula	39129 38091	21.22.12			21.22.31			31. 3	21. 6.59		
Jun. 16	Sole languidissimo	39068 38036	21.20.23			21.20.42			30.53	21. 5.15		
Jun. 17	Sole clavo specie tremula	39014 37971	21.18.46			21.19. 5			31.19	21. 3.15		
Jun. 19	Sole languido	38936 37897	21.16.16			21.16.46			31. 8	21. 1.12		
Jun. 20	Sole clavo calo sereno specie tremula	38934 37900	21.16.22			21.16.42			30.58	21. 1.23		
Jun. 21	Sole clavo calo nubilo	38930 37909	21.16.16			21.16.35			30.37	21. 1.17		
Jun. 22	ut supra, & specie tremula	38945 37912	21.16.44			21.17. 3			30.56	21. 1.35		
Jun. 23	ut supra	38978 37940	21.17.44			21.18. 3			31. 7	21. 2.29		
Jun. 24	ut supra	39014 37983	21.18.47			21.19.16			31. 5	21. 3.43		
Jun. 25	ut supra	39073 38040	21.20.39			21.20.58			31. 1	21. 5.27		
Jun. 26	ut supra	39153 38108	21.22.54			21.23.13			31.14	21. 7.36		
Jun. 27	Sole languido	39227 38189	21.25. 8			21.25.27			31. 2	21. 9.56		
Jun. 28	Sole clavo calo nubilo specie tremula	39334 38292	21.28.20			21.28.39			31. 9	21.13. 4		
Jun. 29	ut supra, sed calo sereno	39450 38405	1.31.45			21.32. 5			31.11	21.16.29		

Jan.

1697		Tangen- tes cor- rigitæ a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
Jun. 30	ex schedis Co: Grassij, & Gulielmini adverb. Sole claro caelo nubilo	39379 38545	21.35.37 21. 4.45	21.35.57 21. 5. 4	30.53	21.20.30
Jul. 2	Sole languido	39866 38820	21.44. 8 21.13. 0	21.44.28 21.13.19	31. 9	21.28.53
Jul. 3	Sole languido incerta	40035 38997	21.49. 4 21.18.17	21.49.24 21.18.36	30.48	21.34. 0
Jul. 4	Sole claro caelo nubilo specie tremula	40218 39164	21.54.33 21.23.14	21.54.53 21.23.33	31.20	21.39.13
Jul. 6	ut supra	40616 39567	22. 6.19 21.35.15	22. 6.39 21.35.35	31. 4	21.51. 7
Jul. 7	ut supra	40835 39785	22.12.46 21.42.43	22.13. 6 21.42. 3	31. 3	21.57.34
Jul. 8	Caelo sereno specie tremula	41071 40015	22.19.44 21.48.32	22.20. 4 21.48.52	31.12	22. 4.28
Jul. 9	Sole clariusculo caelo nebuloso	41323 40274	22.27. 7 21.56.12	22.27.27 21.56.32	30.55	22.21.39
Jul. 10	Sole claro caelo nebuloso specie tremula	41583 40530	22.34.45 22. 3.45	22.35. 6 22. 4. 5	31. 1	22.19.35
Jul. 11	ut supra	41862 40815	22.42.55 22.12.11	22.42.16 22.12.31	29.45	22.27.23
Jul. 12	Sole optimo specie tremula	42150 41094	22.51.20 22.20.23	22.51.42 22.20.42	30.58	22.36.12
Jul. 13	Sole languido	42446 41397	22.59.58 22.29.17	23. 0.19 22.29.37	30.42	22.44.58
Jul. 16	Sole claro caelo nubilo	43445 42370	23.28.58 22.57.45	23.29.19 22.58. 6	31.13	23.13.42
Jul. 17	ut supra	43795 42730	23.39. 5 23. 8.14	23.39.27 23. 8.35	30.52	23.24. 1

1697		Tangen- tes cor- re- ctæ a pe- nombra	Dist. a vertice apparenti limborum			Dist. a vertice vera lim- borum			Diam. app. Solis		Dist. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	G	I	II
Jul. 20	ex schedis Co. Grassij, & advers. Guliel. Sole claro caelo nubilo	44946 43867	24.12. 7			24.12.29			30.58		23.57. 0		
Jul. 21	ut supra	45355 44270	24.23.48			24.24.10			31. 3		24. 8.38		
Jul. 22	Sole clariusculo	45772 44689	24.35.40			24.36. 3			30.55		24.20.35		
Jul. 23	ut supra	46218 45124	24.48.21			24.48.44			31. 9		24.33. 9		
Jul. 24	Sole clarissimo, & maxime tremulo	46659 45570	25. 0.48			25. 1.11			30.54		24.46.44		
Jul. 25	clarissimo	47127 46025	25.13.59			25.14.22			31. 8		24.58.48		
Jul. 26	ut supra	47607 46502	25.27.28			25.27.51			31. 6		25.12.18		
Jul. 27	ut supra caelo nubilo	48098 46989	25.41.12			25.41.36			31. 6		25.26. 3		
Jul. 29	ut supra	49112 47998	26. 9.25			26. 9.49			31. 0		25.54.19		
Jul. 30	ut supra	49642 48523	26.24. 3			26.24.28			31. 1		26. 8.57		
Jul. 31	ut supra	50187 49050	26.39. 3			26.39.28			31.24		26.23.46		
Aug. 1	ut supra	50735 49606	26.54. 4			26.54.30			31. 1		26.38.59		
Aug. 2	ut supra	51314 50163	27. 9.51			27.10.47			31.28		26.54.33		

Aug.

1697		Tangen. tes corre ctæ a pe numbra	Diff. a vertice apparenti limborum			Diff. a vertice vera lim borum			Diam. app. Solis		Diff. a vertice vera cen tri		
			G	I	II	G	I	II	I	II	G	I	II
	Deinceps observationes o mnes sive a me ipso, sive ab aliis habitæ, depromptæ sunt ex meis adversariis, quæ con scribere cæpi die 3. Augusti 1697												
Aug. 3	Sole claro cælo sereno	51890 50747	27.25.29	26.54.23		27.25.55	26.54.49		31. 6		27.10.22		
Aug. 4	ut supra	52481 51337	27.41.28	27.10.29		27.41.55	27.30.55		31. 0		27.26.25		
Aug. 5	ut supra	53102 51933	27.58.10	27.26.39		27.58.37	27.27. 5		31.32		27.42.51		
Aug. 6	Sole languido	53722 52557	28.14.45	27.43.31		28.15.12	27.43.58		31.14		27.59.35		
Aug. 8	Sole languido	55004 53831	28.48.46	28.17.39		28.49.14	28.18. 6		31. 8		28.33.40		
Aug. 9	ut supra	55664 54472	29. 6. 8	28.34.41		29. 6.36	28.35. 9		31.33		28.50.55		
Aug. 10	ut supra	56345 55150	29.23.58	28.52.37		29.24.26	28.53. 5		31.21		29. 8.45		
Aug. 11	ut supra	57033 55829	29.41.52	29.10.27		29.42.21	29.10.55		31.26		29.26.38		
Aug. 12	Sole claro	57717 56530	30. 0. 2	29.28.47		30. 0.31	29.29.15		31.16		29.44.53		
Aug. 13	Sole claro	58548 57237	30.20.54	29.47. 8		30.21.23	29.47.37		33.46				
Aug. 14	Sole languido	59186 57956	30.37.11	30. 5.44		30.37.41	30. 6.13		31.28		30.21.57		
Aug. 15	Sole claro	59925 58695	30.55.57	30.24.38		30.56.27	30.25. 7		31.20		30.40.47		

Aug.

1697		Tangen tes cor- de a pe- numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	I	G	I	II
Aug. 16	Sole claro	60684 59445	31.15. 4 30.43.46			31.15.34 30.44.16			31.18			30.59.55		
Aug. 17	Sole claro	61455 60309	31.34.23 31. 3. 6			31.34.53 31. 3.36			31.17			31.19.14		
Aug. 18	Sole languido	62237 60984	31.53.49 31.22.36			31.54.21 31.23. 7			31.14			31.38.44		
Aug. 19	Sole languido	63037 61777	30.13.34 31.42.25			32.14. 6 31.42.56			31.10			31.58.31		
Aug. 21	Sole claro	64663 63392	32.53.16 32.22.18			32.53.49 32.22.50			30.59			32.38.20		
Aug. 22	Sole claro	65516 64215	33.13.53 32.42.24			33.14.26 32.42.57			31.29			32.58.41		
Aug. 23	Sole claro	66370 65061	33.34.20 33. 2.54			33.34.54 33. 3.27			31.27			33.19.10		
Aug. 25	Sole clarissimo	68116 66795	34.15.40 33.44.27			34.16.15 33.45. 1			31.14			34. 0.38		
Aug. 26	Sole clarissimo	69021 67682	34.36.37 34. 5.27			34.37.13 34. 6. 2			31.11			34.21.37		
Aug. 27	Sole clarissimo specie tre- mula	69933 68575	34.57.59 34.26.25			34.58.35 34.27. 0			31.35			34.42.47		
Aug. 28	Sole clarissimo	70856 69498	35.19.11 34.47.54			35.19.47 34.48.20			31.18			35. 4. 8		
Aug. 29	Sole claro cælo nubilo	71803 70425	35.40.46 35. 9.19			35.41.23 35. 9.55			31.18			35.25.39		
Aug. 30	clarissimo	72761 71370	36. 2.24 35.30.57			36. 3. 1 35.31. 3			31.58			35.47. 2		
Aug. 31	observatio dubia	73702 72328	36.23.28 35.52.40			36.24. 5 35.53.17			30.48			36. 8.41		
Sept. 1	Sole claro cælo sereno spe- cie tremula	74723 73306	36.46. 6 36.14.37			36.46.45 36.15.24			31.31			36.30.59		

Sept.

		Tangen tes cor- re dia a pe- numbra	Dist. a vertice apparentis limborum		Dist. a vertice vera lim- borum		Diam. app. Solis		Dist. a vertice vera cen- tri	
			G	I II	G	I II	I II	I II	G	I II
1697										
Sept. 2	Sole claro cælo nubilo	75717 74300	37. 7.57 36. 36.45		37. 8.36 36. 37.23		31.13		36.52.59	
Sept. 3	ut supra	76729 75299	37.29.57 36. 58.46		37.30.37 36. 59.25		31.12		37.15. 1	
Sept. 4	Sole clarissimo	77764 76314	37.52.13 37.20.57		37.52.54 37.21.37		31.17		37.37.15	
Sept. 5	ut supra	78822 77344	38.14.46 37.43.12		38.15.27 37.43.53		31.34		37.59.40	
Sept. 6	ut supra	79877 78393	38.37. 0 38. 5.39		38.37.42 38. 6.20		31.21		38.22. 1	
Sept. 7	Sole claro cælo nubilo	80964 79459	38.59.43 38.28.14		39. 0.26 38.28.56		31.30		38.44.41	
Sept. 8	clarissimo	82051 80536	39.22. 9 38.50.48		39.22.52 38.51.31		31.21		39. 7.11	
Sept. 9	clarissimo	83181 81640	39.45.15 39.13.43		39.45.59 39.14.26		31.33		39.30.12	
Sept. 10	Sole languido	84285 82753	40. 7.34 39.36.32		40. 8.18 39.37.16		31. 2		39.52.47	
Sept. 11	Sole languido	86615 85023	40.53.52 40.22.21		40.54.38 40.23. 5		31.33		40.38.51	
Sept. 12	Sole claro cælo nubilo	87797 86188	41.16.57 40.45.27		41.17.43 40.46.13		31.30		41. 1.58	
Sept. 13	Sole languido	88992 87370	41.40. 0 41. 8.38		41.40.47 41. 9.24		31.23		41.25. 5	
Sept. 14	claro, cælo subnubilo	91447 89788	42.26.31 41.55.12		42.27.19 41.55.59		31.20		42.11.39	
Sept. 15	clarissimo	92697 91015	42.49.47 42.18.23		42.50.35 42.19.10		31.25		42.34.53	
Sept. 16	languido	93965 92269	43.13. 4 42.41.53		43.13.53 42.42.41		31.12		42.58.17	

Sept.

		Tangen- tes cor- rue a pe- numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis		Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	r	II	G	I	II
1697													
Sept. 22	Sole claro celo nubilo	99237 97433	44.46.49	44.15.18	44.47.41	44.16.9			31.32		44.31.51		
Sept. 23	Sole languido	100593 98778	45.10.10	44.38.53	45.11.2	44.39.45			31.27		44.55.23		
Sept. 25	Sole languido	103387 101513	45.57.15	45.25.48	45.58.9	45.26.41			31.28		45.42.21		
Sept. 27	Sole clarissimo specie tre- mula	106244 104312	46.44.3	46.12.33	46.44.59	46.13.27			31.32		46.29.13		
Sept. 28	ut supra	107703 105742	47.7.26	46.35.55	47.8.22	46.36.50			31.32		46.53.36		
Sept. 30	Sole claro celo nubilo	110707 108674	47.54.32	47.22.49	47.55.30	47.23.46			31.44		47.39.58		
Oct. 1	Sole languidissimo	112202 100184	48.17.28	47.46.26	48.18.27	47.47.23			31.4		48.2.55		
Oct. 2	Sole clarissimo	113771 111680	48.41.9	48.9.30	48.42.9	48.10.28			31.41		48.26.18		
Oct. 3	ut supra	115323 113215	49.4.4	48.32.48	49.5.4	48.33.47			31.17		48.49.36		
Oct. 8	Sole claro celo nubilo	123447 121157	50.59.25	50.27.52	51.0.29	50.28.55			31.34		50.44.42		
Oct. 17	ut supra	139478 136801	54.21.40	53.50.1	54.22.53	53.51.13			31.40		54.7.3		
Oct. 19	clarissimo	143270 140500	55.5.8	54.53.32	55.6.23	54.34.46			31.37		54.50.34		
Oct. 21	Sole languido	147128 144245	55.47.48	55.16.4	55.49.6	55.17.20			31.46		55.33.13		
Oct. 22	Sole claro celo subnubilo	149097 146168	56.9.0	55.37.30	56.10.19	55.38.57			31.42		55.54.8		
Oct. 23	ut supra	151103 148120	56.30.13	55.58.32	56.31.33	55.59.51			31.42		56.15.43		

Oct.

1697		Tangen- tes cor- re et a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
Oct. 29	ut supra. Hac nocte Tan- gentes lunæ in meridiana incorrectæ 61239, 59839	163453 160129	58.32.31 58. 0.56	58.33.59 52. 2.12	31.47	58.18.
Oct. 30	Sole claro	165547 162156	58.11.56 58.20.17	58.13.26 58.21.44	31.42	58.37.35
Oct. 31	Sole clarissimo	167665 164198	59.11.14 58.39.28	59.12.45 58.40.56	31.49	58.56.50
Nov. 4	Sole claro	176350 172590	60.26.40 59.54.42	60.28.16 59.56.16	32. 0	60.12.16
Nov. 5	nebuloso	178532 174718	60.44.45 60.12.55	60.46.22 60.14.30	31.52	60.30.26
Nov. 6	Sole sublanguido	180738 176846	61. 2.46 60.30.48	61. 4.24 60.32.24	32. 0	60.48.24
Nov. 7	clarissimo	182944 178990	61.20.18 60.48.30	61.21.57 60.50. 7	31.50	61. 6. 2
Nov. 8	languidissimo	185139 181132	61.37.30 61. 5.32	61.39.10 61. 7.30	31.40	61.23.20
Nov. 9	claro	187362 183253	61.54.36 61.22.44	61.56.18 61.24.23	31.55	61.40.20
Nov. 10	claro	189594 185393	62.11.28 61.39.28	62.13.11 61.41. 2	32. 3	61.57. 9
Nov. 11	clarissimo	191788 187529	62.27.44 61.55.53	62.29.28 61.57.55	31.53	62.13.31
Nov. 13	clarissimo specie valde tre- mula cælo nubilo	196226 191791	62.59.45 62.27.45	63. 1.31 62.29.29	32. 2	62.45.30
Nov. 14	Sole languido	198409 193939	63.15. 6 62.43.24	63.16.53 62.45. 9	31.44	63. 1. 1
Nov. 15	Sole claro	200636 196045	63.30.28 62.58.28	63.32.16 63. 0.14	32. 2	63.16.15

Cc

Nov.

		Tangen tes cor- re a pe- numbra	Dist. a vertice apparen- s limborum			Dist. a vertice vera lim- borum			Diam. app. Solis	Dist. a vertice vera cen- tri		
			G	I	II	G	I	II		G	I	II
1697												
Nov. 16	Sole claro czło nubilo	202804 198163	63.45.10 63.13.23			63.47. 0 63.15.10			31.50	63.31. 5		
Nov. 21	Sole claro czło subnubilo	213929 208466	64.56.48 64.22.24			64.58.45 64.24.17			34.28			
Dec. 10	Sole claro czło sereno	244654 238270	67.46. 5 67.13.58			67.48.20 67.16. 9			32.11	67.32.14		
Dec. 14	Sole languidissimo	247864 241434	68. 1.41 67.30. 4			68. 3.57 67.32.17			31.40	67.48. 7		
Dec. 15	Sole claro czło nubilo spe- cie tremula	248499 241995	68. 4.46 67.32.53			68. 7. 2 67.35. 6			31.56	67.51. 4		
Dec. 17	Sole clarissimo	249391 242808	68. 9. 1 67.36.57			68.11.18 67.39.10			32. 8	67.55.14		
Dec. 19	ut supra	249900 243270	68.11.26 67.39.14			68.13.43 67.41.29			32.14	67.57.36		
Dec. 20	Sole clarissimo czło sub nubilo, specie tremula	250014 243386	68.11.59 67.39.49			68.14.16 67.42. 2			32.14	67.58. 9		
1698												
Jan. 2	Sole clarissimo	242509 236224	67.35.27 67. 3.21			67.37.40 67. 5.30			32.10	67.21.35		
Jan. 3	Sole clarissimo	241286 235080	67.29.19 66.57.20			67.31.31 66.59.29			32. 2	67.15.30		
Jan. 6	Sole languido	237227 237169	67. 8.34 66.36.27			67.10.44 66.38.33			32.11	66.54.39		
Jan. 7	Sole languido	235725 229762	67. 0.44 66.28.47			67. 2.53 66.30.53			32. 0	66.46.53		
Jan. 9	Sole clariss. czło nubilo	232525 226692	66.43.46 66.11.47			66.45.52 66.13.51			32. 1	66.29.51		
Jan. 25	Sole clarissimo	200544 195969	63.29.50 62.57.56			63.31.38 62.59.42			31.56	63.15.40		

Frb.

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1698		Tangen tes cor re ctæ ap pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G 1 11	G 1 11	1 11	G 1 11	G 1 11
Feb. 3	ut supra	180528 176648	61. 0.51 60.29. 7	61. 2.29 60.30.43	31.46	60.46.36
Feb. 10	Sole claro cælo subnubilo	165262 161864	58.49.19 58.17.31	58.50.48 58.18.48	32. 0	58.34.48
Feb. 11	Sole clarissimo	163124 159801	58.29.25 57.57.45	58.30.53 57.59.11	31.42	58.15. 2
Feb. 13	Sole pallido	158927 155696	57.49.16 57.17.18	57.50.41 57.18.41	32. 0	57.34.41
Feb. 18	Sole pallido	148690 145777	56. 4.39 55.33. 3	56. 5.58 55.34.21	31.37	55.50. 9
Feb. 20	Sole clarissimo	144743 141946	55.21.37 54.50. 8	55.22.53 54.51.23	31.30	55. 7. 8
Feb. 21	Sole claro	142814 140064	55. 0. 0 54.28.29	55. 1.15 54.29.42	31.33	54.45.29
Mar. 3	Sole pallido	124610 122299	51.15.10 50.43.42	51.16.15 50.44.46	31.29	51. 0.30
Mar. 5	Sole claro specie tremula	121232 118990	50.28.55 49.57.22	50.29.59 49.58.25	31.34	50.14.12
Mar. 6	Sole clarissimo	119577 117366	50. 5.41 49.34. 4	50. 6.44 49.35. 6	31.38	49.50.55
Mar. 7	Sole claro specie tremula	117963 115770	49.42.40 49.10.49	49.43.42 49.11.50	31.52	49.27.46
Mar. 8	ut supra	116335 114194	49.19. 5 48.47.29	49.20. 6 48.48.29	31.37	49. 4.17
Mar. 9	ut supra	114743 112629	48.55.39 48.23.56	48.56.39 48.24.55	31.44	48.40.47
Mar. 10	ut supra	113187 111111	48.32.23 48. 0.46	48.33.22 48. 1.44	31.38	48.17.33
Mar. 11	claro cælo nubilo	111625 109592	48. 8.39 47.37.13	48. 9.37 47.38.10	31.27	47.53.53

Cc 2

Mar.

1698		Tangen tes corre ctæ a pe- numbra	Dist. a vertice apparens limborum			Dist. a vertice vera lim borum			Diam. app. Solis			Dist. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
Mar. 16	ut supra	104202 102297	46.10.44			46.11.38			31.43			43.53.46		
Mar. 21	Sole pallidissimo. Hac no- cte Tangentes Lunæ in meri- diana 61192, 39926 incor- rectæ	97263 95492	44.12.18			44.13. 9			31.33			43.57.23		
Mar. 22	Sole claro cælo nubilo. Tangentes merid. Lunæ in- corr. 69458, 68085	95939 94172	43.49. 8			43.49.39			32.18			43.33.50		
Mar. 23	ut supra	94624 92900	43.25. 4			43.25.53			31.33			43.10. 6		
Mar. 24	Sole clarissimo	93329 91624	43. 1.25			43. 2.14			31.36			42.46.26		
Mar. 25	Sole claro cælo nubilo	92067 90382	42.38. 7			42.38.55			31.40			42.23. 5		
Mar. 26	Sole pallido	90803 89153	42.14.25			42.15.12			31.21			41.59.31		
Mar. 27	Sole clarissimo	89572 87936	41.51. 6			41.51.53			31.29			41.36. 8		
Mar. 29	Sole claro cælo subnubilo	87167 85550	41. 4.40			41. 5.26			31.52			40.49.30		
Mar. 30	Sole clarissimo specie tre- mula	85973 84390	40.41.12			40.41.57			31.33			40.26.10		
Mar. 31	ut supra	84811 83251	40.18. 6			40.18.50			31.26			40. 3. 7		
Apr. 1	Sole claro specie tremula	83661 82115	39.54.59			39.55.43			31.44			39.39.51		
Apr. 2	ut supra	82539 81003	39.32.10			39.32.54			31.40			39.17. 4		

Apr.

		Tangen tes cor re ctæ a p e numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
1698						
Apr. 3	Sole languidissimo	81409 79920	39. 8.55 38.37.55	39. 9.38 38.38.38	31. 0	38.54. 8
Apr. 4	Sole clarissimo	80223 78818	38.46.21 38.14.40	38.47. 4 38.15.21	31.43	38.31.12
Apr. 5	ut supra	79249 77758	38.23.47 37.52. 5	38.24.29 37.52.46	31.43	38. 8.37
Apr. 6	clarissimo, specie tremula	78181 76714	38. 1. 8 37.29.36	38. 1.49 37.30.16	31.33	37.46. 2
Apr. 7	ut supra	77128 75683	37.38.33 37. 7.10	37.39.13 37. 7.49	31.24	37.23.32
Apr. 9	ut supra	75090 73661	36.54.10 36.22.33	36.54.49 36.23.11	31.38	36.39. 0
Apr. 16	Inter. nubes. Hac nocte Tangentes meridianæ Lunæ incorrectæ 76413, 74980	68385 67059	34.21.59 33.50.43	34.22.34 33.51.18	31.16	34. 6.56
Apr. 20	Sole claro	64896 63608	32.58.56 32.27.35	32.59.29 32.28. 7	31.22	32.43.48
Apr. 21	ut supra. Hac nocte cen trum ☽ in meridiana h. 9. 37 4. p.m. Tangentes incorrectæ 101388, 99610	64070 62780	32.38.51 32. 7.15	32.39.24 32. 7.47	31.37	32.23.35
Apr. 22	Sole nebuloso	63248 61975	32.18.45 31.47.19	32.19.17 31.47.51	31.26	32. 3.34
Apr. 24	Sole languido	61639 60390	31.38.57 31. 7.40	31.39.28 31. 8.10	31.18	31.23.49
Apr. 28	ut supra	58608 57392	30.22.25 29.51. 9	30.22.54 29.51.38	31.16	30. 7.16
Apr. 29	Sole languidissimo	57859 56709	30. 3.12 29.33.25	30. 3.41 29.33.54	29.47	29.48.48

Apr.

1698		Tangen- tes cor- re- ctæ a pe- numbra	Diff. a vertice apparentis limborum			Diff. a vertice verali lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	III	G	I	II
Apr. 30	Sole claro specie tremula	57179 55965	29.45.38 29.14.1			29.46.7 29.14.29			31.38			29.30.18		
Maj. 1	Sole clarissimo specie tre- mula	56473 55291	29.27.17 28.56.19			29.27.45 28.56.47			30.58			29.12.16		
Maj. 3	Sole claro cælo nubilo	55124 53946	28.51.58 28.20.42			28.52.26 28.21.10			31.16			28.36.48		
Maj. 4	Sole nubilo specie tremula	54475 53307	28.34.46 28.3.39			28.35.14 28.4.6			31.8			28.19.40		
Maj. 5	Sole claro	53828 52659	28.17.34 27.46.15			28.18.1 27.46.42			31.19			28.2.21		
Maj. 7	Sole languido	52585 51433	27.44.16 27.13.5			27.44.43 27.13.31			31.12			27.29.7		
Maj. 10	ut supra	50813 49685	26.56.12 26.25.13			26.56.38 26.25.38			31.0			26.41.8		
Maj. 12	Sole claro cælo nubilo	49712 48585	26.25.58 25.54.46			26.26.22 25.55.10			31.12			26.10.46		
Maj. 15	claro	48152 47038	25.42.42 25.11.29			25.43.6 25.11.52			31.14			25.27.29		
Maj. 19	clarissimo	46257 45135	24.49.26 24.18.12			24.49.49 24.18.34			31.15			24.34.12		
Maj. 20	Sole claro cælo nubilo	45815 44722	24.36.54 24.5.43			24.37.17 24.6.5			31.12			24.21.41		
Maj. 21	clarissimo	45391 44298	24.24.50 23.53.33			24.25.12 23.53.55			31.17			24.9.33		
Maj. 22	claro, cælo nubilo	42789 41720	23.9.56 22.38.45			23.10.17 22.39.6			31.21			22.54.41		
Maj. 29	ut antea	42465 41402	23.0.31 22.29.26			23.0.52 22.29.47			31.5			22.45.20		
Maj. 30	ut supra	42164 41094	22.51.44 22.20.24			22.52.5 22.20.44			31.21			22.36.24		

Maj.

		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G ° ' "	G ° ' "	G ° ' "	G ° ' "	G ° ' "
1698						
Maj. 31	Sole languido	41866 40814	22.43. 2 22.12. 8	22.43.23 22.12.18	30.55	22.27.55
JUN. 1	Sole clarissimo	41606 40531	22.35.25 22. 3.48	22.35.46 22. 4. 8	31.38	22.19.57
JUN. 2	ut supra	41334 40277	22.27.26 21.56.18	22.27.46 21.56.38	31. 8	22.12.12
JUN. 3	ut supra	41075 40025	22.19.49 21.48.51	22.20. 9 21.49.11	30.58	22. 4.40
JUN. 4	ut supra	40839 39796	22.12.53 21.42. 3	22.13.13 21.42.23	30.50	22.57.48
JUN. 5	Sole pallido	40610 39587	22. 6. 8 21.35.50	22. 6.28 21.36.10	29.58	21.51. 9
JUN. 6	ut supra	40408 39379	22. 0.10 21.29.38	22. 0.30 21.29.58	30.32	21.45.14
JUN. 8	pallidissimo	40003 39011	21.48.11 21.18.41	21.48.31 21.19. 1	28.30	21.33.16
JUN. 9	clarissimo	39868 38816	21.44.11 21.12.52	21.44.31 21.13.12	31.19	21.28.51
JUN. 11	claro, czio nebuloso	39570 38539	21.35.20 21. 4.35	21.35.40 21. 4.54	30.46	21.20.17
JUN. 12	ut supra	39454 38405	21.31.53 21. 0.34	21.32.13 21. 0.53	31.20	21.16.33
JUN. 13	optima	39340 38296	21.28.30 20.57.18	21.28.50 20.57.37	31.15	21.13.23
JUN. 16	Sole clarissimo	39081 38041	21.20.47 20.49.38	21.21. 7 20.49.57	31.10	21. 5.32
JUN. 17	Sole valde languido	39007 37995	21.18.54 20.48.16	21.18.54 20.48.55	30.19	21. 3.44
JUN. 18	clarissimo	38980 37933	21.17.46 20.46.25	20.18. 6 20.46.44	31.22	21. 2.25

JUN.

1698		Tangen- tes cor- ræ a pe- numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis		Diff. a vertice vera cen- tri	
			G	I II	G	I II	I II		G	I II
Jun. 19	clarissimo	38950 37912	21.16.51	20.45.4	21.17.21	20.46.6	31.5		21.1.38	
Jun. 20	Sole clarissimo. Hac noct. Tangentes meridianæ D in correctæ 191471, 187533	38933 37901	21.16.24	20.45.26	21.16.44	20.45.46	30.58		21.1.25	
Jun. 21	Sole languidissimo. Tangentes vero D incorrectæ 207547, 203016	38924 37903	21.16.5	20.45.30	21.16.25	20.45.50	30.35		21.1.8	
Jun. 22	Sole claro cælo nubilo	38950 37903	21.16.51	20.45.30	21.17.11	20.45.50	31.21		21.1.30	
Jun. 23	Sole claro cælo nubilo. Lunæ centrum in meridiana hor. 12.29.54 post meridiem. Tangen. incorrectæ 203686, 199289	38971 37938	21.17.30	20.46.33	21.17.50	20.46.52	30.58		21.1.21	
Jun. 24	Sole claro	39010 37976	21.18.39	20.47.40	21.18.59	20.47.59	31.0		21.3.29	
Jun. 25	Sole claro	39072 38023	21.20.30	20.49.7	21.20.50	20.49.26	31.24		21.5.8	
Jun. 26	ut supra	39133 38088	21.22.20	20.51.4	21.22.40	20.51.23	31.17		21.7.1	
Jun. 27		39215 38177	21.24.45	20.53.38	21.25.5	20.53.57	31.8		21.9.31	
Jun. 28	Sole claro cælo nubilo	39310 38265	21.27.35	20.56.22	21.27.55	20.56.41	31.14		21.12.18	
Jun. 29	Sole pallido	39406 38382	21.30.27	20.59.53	21.30.47	21.0.51	30.35		21.15.29	
Jul. 1	Sole claro	39675 38638	21.38.27	21.7.33	21.38.47	21.7.53	30.54		21.23.20	
Jul. 2	ut supra	39825 38783	21.42.54	21.11.52	21.43.14	21.12.12	31.2		21.27.43	

Jul.

		Tangen- tes cor- re- ctæ ap- p- numbra	Diff. a vertice apparentis vera lim- borum		Diff. a vertice apparentis vera lim- borum		Diam. app. Sollis		Diff. a vertice vera cen- tri	
			G	I	G	I	I	I	G	I
1698										
Jul. 5	Sole clarissimo	40360 39317	21.58.45 21.27.49		21.59.5 21.28.9		30.56		21.43.37	
Jul. 6	languido	40368 39519	22. 4.53 21.33.50		22. 5.13 21.34.10		31. 3		21.49.41	
Jul. 7	clarissimo	40784 39730	22.11.15 21.40. 6		22.11.35 21.40.16		31. 9		21.56. 0	
Jul. 8	claro czlo nubilo	41010 39969	22.18.13 21.47.12		22.18.33 21.47.31		31. 2		22. 3. 2	
Jul. 9	ut antea	41255 40210	22.25. 8 21.54.19		22.25.28 21.54.39		30.49		22.10. 3	
Jul. 10	ut antea	41515 40461	22.32.46 22. 1.45		22.33. 6 22. 2. 5		31. 2		22.17.35	
Jul. 11	Sole languido	41789 40737	22.40.47 22. 9.51		22.41. 7 22.10.12		30.55		22.25.39	
Jul. 14	Sole claro	42684 41625	23. 6.53 22.36. 0		23. 7.14 22.36.10		30.54		22.51.47	
Jul. 15	claro	43014 41955	23.16.29 22.45.39		23.16.50 22.45.59		30.51		23. 2.24	
Jul. 16	clarissimo	43355 42290	23.26.21 22.55.25		23.26.42 22.55.45		30.57		23.11.13	
Jul. 17	clarissimo	43709 42639	23.36.36 23. 5.35		23.36.57 23. 5.56		31. 1		23.21.26	
Jul. 18	claro	44069 42995	23.46.57 23.15.55		23.47.19 23.16.16		31. 3		23.31.47	
Jul. 19	ut antea	44461 43374	23.58.14 23.26.54		23.58.36 23.27.15		31.21		23.42.55	
Jul. 20		44851 43767	24. 9.24 23.38.16		24. 9.46 23.38.38		31. 8		23.54.12	
Jul. 21	Sole claro	45248 44169	24.20.45 23.49.50		24.21. 7 23.50.12		30.55		24. 5.39	

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Jul.

1698		Tangen- tes cor- de a pe- numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis		Diff. a vertice vera cen- tri	
			G	I	G	I	I	I	G	I
Jul. 23	Sole clarissimo	46100 45012	24.44.59	24.14.0	24.45.22	24.14.22	31.0		24.29.52	
Jul. 24	ut antea	46553 45454	24.57.49	24.26.37	24.58.12	24.27.0	31.12		24.42.36	
Jul. 25	ut antea	47014 45912	25.10.49	24.39.39	25.11.12	24.40.2	31.10		24.55.37	
Jul. 26	ut antea	47508 46385	25.24.42	24.53.4	25.25.15	24.53.27	31.48		25.9.21	
Jul. 27	ut antea	47961 46863	25.37.23	25.6.34	25.37.47	25.6.57	30.50		25.22.22	
Jul. 28	ut antea	48479 47362	25.51.50	25.20.35	25.52.14	25.20.58	31.16		25.36.36	
Jul. 29	Sole pallido	48991 47869	26.6.3	25.34.48	26.6.27	25.35.12	31.15		25.50.49	
Jul. 30	Sole languido	49519 48391	26.20.40	25.49.23	26.21.5	25.49.47	31.18		26.5.26	
Jul. 31	ut supra	50048 48921	26.35.15	26.4.7	26.35.41	26.4.31	31.10		26.20.6	
Aug. 1	Sole clarissimo	50602 49471	26.50.26	26.19.20	26.50.52	26.19.45	31.7		26.35.18	
Aug. 4	Sole pallido	52344 51195	27.37.47	27.6.37	27.38.24	27.7.3	31.21		27.22.45	
Aug. 5	clarissimo	52946 51789	27.53.58	27.22.45	27.54.25	27.23.11	31.14		27.38.48	
Aug. 6	Sole claro	53570 52408	28.10.25	27.39.31	28.10.52	27.39.58	30.54		27.55.25	
Aug. 8	languido	54835 53670	28.44.17	28.13.38	28.44.45	28.14.5	30.40		28.29.25	
Aug. 10	claro	56165 54987	29.19.16	28.48.19	29.19.44	28.48.47	30.57		29.4.15	

Aug.

		Tangen tes cor- re et a pe numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G ° ' "	G ° ' "	° ' "	G ° ' "
1698						
Aug. 12	ut antea	56860 53669	29.37.22 29. 6.16	29.37.51 29. 6.44	31. 7	29.22.17
Aug. 14	pallido	58986 57784	30.32. 6 30. 1.16	30.32.36 30. 1.45	30.51	30.17.10
Aug. 16	pallido	60484 59276	31.10. 4 30.39.30	31.10.34 30.40. 0	30.34	30.55.17
Aug. 17	clarissimo	61259 60019	31.29.28 30.58.19	31.29.59 30.58.49	31.10	31.14.24
Aug. 18	languido	62030 60792	31.48.42 31.17.47	31.49.14 31.18.18	30.56	31.34.46
Aug. 21	pallido	64456 63191	32.48.16 32.17.22	32.48.49 32.17.54	30.55	32.33.21
Aug. 22	claro	65308 64004	33. 8.53 32.37.16	33. 9.26 32.37.49	31.37	32.53.37
Aug. 24	ut antea	67011 65707	33.49.36 33.18.28	33.50.10 33.19.12	30.58	33.34.42
Aug. 25	pallido	67882 66574	34.10. 9 33.39.12	34.10.44 33.39.46	30.58	33.55.15
Aug. 28	pallido	70616 69277	35.13.42 34.42.47	35.14.18 34.43.22	30.56	34.58.50
Sept. 1	Soleclaro celo nubilo	74469 73069	36.40.29 36. 9.19	36.41. 8 36. 9.56	31.12	36.25.32
Sept. 2	Sole pallido	75448 74063	37. 2. 1 36.31.29	37. 2.40 36.32. 7	30.33	36.47.24
Sept. 3	clarissimo	76478 75053	37.24.30 36.53.22	37.25.10 36.54. 1	31. 9	37. 9.35
Sept. 5	claro	78554 77093	38. 9. 4 37.37.47	38. 9.45 37.38.27	31.18	37.54. 6
Sept. 7	pallido	80682 79213	38.53.51 38.23. 2	38.54.24 38.23.44	30.40	38.39. 4

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Jun.

		Tangen- tes cor- re & a pe- numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
1698														
Sept. 9	clarissimo	82894 81364	39.39.25			39.40. 9			31.26			39.24.26		
Sept. 10	ut antea	84017 82485	40. 2.10			40. 2.54			31. 9			39.47.19		
Sept. 11	clarissimo	85159 83604	40.25. 2			40.25.47			31.13			40.10.10		
Sept. 12	claro	86326 84744	40.48.10			40.48.56			31.25			40.33.33		
Sept. 13	pallido	87488 85908	41.10.55			41.11.41			30.58			40.56.12		
Sept. 14	clarissimo	88693 87083	41.34.15			41.35. 2			31.15			41.19.24		
Sept. 15	languido	89912 88277	41.57.34			41.58.21			31.21			41.42.40		
Sept. 24	languidissimo	101631 99792	45.27.49			45.28.42			31.24			45.13. 0		
Sept. 30	claro	110327 108312	47.48.40			47.49.37			31.35			47.33.49		
Oct. 3	claro	114928 112838	48.58.24			48.59.24			31.28			48.43.45		
Oct. 5	clarissimo	118112 115915	49.44.15			49.45.16			31.19			49.29.36		
Oct. 6	claro	119720 117420	50. 7.43			50. 8.45			32.53			49.52.18		
Oct. 11	clarissimo	128173 125770	52. 2.20			52. 3.27			31.39			51.47.37		
Oct. 12	claro	129923 127479	52.24.55			52.26. 3			31.39			52.10.23		
Oct. 13	clarissimo	131707 129310	52.47.31			52.48.40			31.47			52.32.46		

1698		Tangen- tes cor- re- ctæ a pe- numbra	Diff. a vertice apparentis limborum		Diff. a vertice vera lim- borum		Diam. app. Solis	Diff. a vertice vera cen- tri	
			G	I II	G	I II		G	I II
Oct. 14	clarissimo	133490 130966	53. 9. 45	53.10.55	53.10.55	52.39.20	31. 35	53. 55. 7	
Oct. 17	claro	139023 136350	54.16.21	54.17.34	54.17.34	53.45.48	31. 46	54. 1. 41	
Oct. 18	pallido	140877 138188	54.37.53	54.39. 7	54.39. 7	54. 7. 43	31. 24	54.23.25	
Oct. 20	clarissimo	144705 141922	55.21.11	55.22.27	55.22.27	54.51. 6	31. 21	55. 6. 46	
Oct. 22	clarissimo	148625 145688	56. 3. 58	56. 5. 17	56. 5. 17	55.33.21	31. 56	55.49.19	
Oct. 23	pallido	150687 147639	56.25.50	56.27.10	56.27.10	55.54.40	32. 30	56.10.55	
Oct. 24	Sole claro	152610 149577	56.45.53	56.47.14	56.47.14	56.15.27	32. 47	56.31.20	
Oct. 28	clarissimo	160853 157585	58. 7. 53	58. 9. 19	58. 9. 19	57.37.31	32. 48	57.53.25	
Nov. 1	claro	169292 165780	59.25.50	59.27.22	59.27.22	58.55.35	32. 47	59.11.28	
Nov. 4	clarissimo	175797 172077	60.22. 2	60.23.38	60.23.38	59.51.49	32. 49	60. 7. 43	
Nov. 15	clarissimo	180124 175531	63.26.57	63.28.45	63.28.45	62.56.34	32. 51	63.12.39	
Nov. 17	clarissimo	184481 179773	63.56.22	63.58.13	63.58.13	63.26.19	31. 54	63.42.16	
Nov. 18	ut antea	186636 181808	64.10.33	64.12.25	64.12.25	63.40.16	32. 9	63.56.20	
Nov. 19	languidissimo	188775 183875	64.24.23	64.26.16	64.26.16	63.54.11	32. 5	64.10.13	
Nov. 20	clarissimo	189221 183946	64.38. 2	64.39.56	64.39.56	64. 7. 53	32. 3	64.23.54	

Nov.

1698		Tangen- tes cor- re-ctæ a p- numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim- borum	Diam. app. solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
Nov. 21	claro	213031 207963	64.51.14 64.19.10	64.53.11 64.21.3	32. 8	64.37. 7
Nov. 22	pallido	215075 209961	65. 3.50 64.31.58	65. 5.47 64.33.52	31.55	64.49.49
Nov. 27	claro	214987 219442	66. 2.11 65.30. 5	66. 4.14 65.32. 5	32. 9	65.48. 9
Nov. 28	pallido	226823 221208	66.12.31 65.40.28	66.14.35 65.42.30	32. 5	65.58.32
Dec. 4	clarissimo	236817 230783	67. 6.26 66.34.22	67. 8.35 66.36.18	32. 7	66.52.31
Dec. 5	ut antea	238267 232165	67.13.56 66.41.29	67.16. 7 66.43.56	32.11	67. 0. 3
Dec. 7	pallido	240956 234741	67.27.39 66.55.33	67.29.51 66.57.42	32. 9	67.13.46
Dec. 16	pallido	248850 242309	68. 6.26 67.34.27	68. 8.42 67.36.40	32. 2	67.52.41
Dec. 17	clarissimo	249294 242702	68. 8.48 67.36.27	68.11. 4 67.38.40	32.24	67.54.52
Dec. 18	claro	249620 243024	68.10. 7 67.37.58	68.12.23 67.40.12	32.12	67.56.17
Dec. 20	Sublanguido specie tremula	249967 243360	68.12.45 67.39.42	68.14. 2 67.41.55	32. 7	67.58. 0
Dec. 21	languidissimo	249926 243348	68.12.34 67.39.38	68.13.51 67.41.51	32. 0	67.57.51
Dec. 23	clarissimo	249763 243146	68.10.40 67.38.37	68.12.57 67.40.50	32. 7	67.56.34
Dec. 24	clarissimo	249485 242893	68. 9.28 67.37.42	68.11.45 67.39.55	31.50	67.55.50
Dec. 25	claro	249109 242516	68. 7.41 67.35.29	68. 9.58 67.37.42	32.16	67.53.50

Jan.

		Tangen tes cor- dæ ap- p. num- bra	Diff. a vertice apparenti limborum		Diff. a vertice vera lim- borum		Diam. app. Solis	Diff. a vertice vera cen- tri	
			G	I II	G	I II		G	I II
1699									
Jan. 2	Sole fulgidissimo	342825 236498	67.37.2 67. 4.47		67.39.15 67. 6.56		32.19	67.23.5	
Jan. 3	ut antea	241613 235367	67.30.58 66.58.51		67.33.11 67. 1. 0		32.11	67.17.5	
Jan. 5	ut antea	239022 232856	67.17.49 66.45.32		67.20. 1 66.47.40		32.21	67. 3.50	
Jan. 6	Sole claro	237582 231498	67.10.24 66.38.14		67.12.34 66.40.21		32.13	66.56.28	
Jan. 8	sublanguido	234560 228623	66.54.56 66.22.31		66.56.44 66.24.36		32. 8	66.40.40	
Jan. 10	languidissimo	231265 225494	66.36.58 66. 5. 3		66.39. 5 66. 7. 6		31.59	66.23.5	
Jan. 11	clarissimo, specie tremula	229536 223820	66.27.33 65.55.32		66.29.39 65.57.35		32. 4	66.13.37	
Jan. 15	ut antea	222122 216686	65.45.45 65.13.36		65.47.46 65.15.35		32.11	65.31.40	
Jan. 18	pallido	216088 210899	65.10. 0 64.37.54		65.11.58 64.39.48		32.10	64.55.53	
Jan. 20	Sole fulgidissimo specie tremula	211939 206900	64.44.26 64.12.15		64.46.21 64.14. 8		32.13	64.30.15	
Jan. 21	ut supra	209793 204850	64.30.53 63.58.48		64.32.47 64. 0.39		32. 8	64.16.43	
Jan. 22	claro	207635 202783	64.17. 2 63.45. 1		64.18.55 63.46.50		32. 5	64. 2.52	
Jan. 23	pallido	205488 200723	64. 3. 1 63.31. 3		64. 4.52 63.32.51		32. 1	63.48.52	
Jan. 26	claro, czlo nubilo	198902 194358	63.18.31 62.46.25		63.20.19 62.48.11		32. 8	63. 4.15	
Jan. 27	ut supra	196654 192221	63. 2.47 62.30.54		63. 4.33 62.32.38		31.55	62.48.36	

Jan.

1699		Tangen	Dist.	Dist.	Diam.	Dist.
		tes corre de a pe numbra	a vertice apparens limborum	a vertice vera lim borum	app. Solis	a vertice vera cen tri
			G 1 11	G 1 11	1 11	G 1 11
Jan. 30	clarissimo	189984 185748	62.14.22 61.42.13	62.16. 5 61.43.53	32.12	61.39.59
Jan. 31	languidissimo	187709 183990	61.57.15 61.28.33	61.58.57 61.30.13	28.44	61.44.35
Feb. 1	Sole fulgidissimo specie tremula	185501 181461	61.40.18 61. 8.29	61.42. 0 61.10. 7	31.53	61.26. 4
Feb. 2	ut antea	183285 179301	61.23. 0 60.51. 2	61.24.40 60.52.39	32. 1	61. 8.40
Feb. 4	ut antea	178847 175017	60.47.19 60.15.27	60.48.56 60.17. 2	31.54	60.32.59
Feb. 7	ut antea	172234 168640	59.51.37 59.19.59	59.53.11 59.21.31	31.40	59.37.21
Feb. 8	claro	170080 166551	59.32.46 59. 1. 2	59.34.18 59. 2.37	31.41	59.18.27
Feb. 9	clarissimo	167923 164422	59.13.32 58.41.33	59.15. 3 58.43. 2	32. 1	58.59. 2
Feb. 11	claro	163669 160327	58.34.32 58. 2.50	58.36. 0 58. 4.16	31.44	58.20. 8
Feb. 16	clarissimo	153246 150180	56.52.25 56.20.30	56.53.47 56.21.50	31.57	56.37.48
Feb. 17	languidissimo	151213 148181	56.31.21 55.59.12	56.32.42 56. 0.31	32.11	56.16.36
Feb. 18	Sole claro cælo nubilo specie tremula	149204 146247	56.10. 9 55.38.15	56.11.28 55.39.32	31.56	55.55.30
Feb. 19	clarissimo	147203 144299	55.48.37 55.16.40	55.49.53 55.17.56	31.59	55.33.54
Feb. 23	claro	143302 140525	55. 9.29 54.33.49	55. 6.44 54.35. 3	31.41	54.50.54

Feb.

		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
1699						
Feb. 22	clarissimo	141398 138648	54.43.52 54.11.56	54.45. 6 54.13. 8	31.58	54.29. 7
Feb. 24	claro	137622 134956	53.59.49 53.27.50	54. 1. 1 53.29. 1	32. 0	53.45. 1
Feb. 25	fulgidissimo	135754 133145	53.37.25 53. 5.28	53.38.36 53. 6.38	31.58	53.22.37
Feb. 27	pallido	132084 129585	52.52.15 52.20.34	52.53.25 52.21.42	31.43	52.37.33
Mar. 2	languidissimo	126771 124409	51.43.58 51.12.28	51.45. 4 51.13.32	31.32	51.29.18
Mar. 3	fulgidissimo	125057 122704	51.21.11 50.49.16	51.22.15 50.50.18	31.57	51. 6.16
Mar. 4	fulgidissimo	123341 121036	50.57.58 50.26.10	50.59. 2 50.27.14	31.48	50.43. 8
Mar. 8	languidissimo	116746 114596	49.25. 4 48.53.28	49.26. 6 48.54.28	31.38	49.10.16
Mar. 9	claro	115152 113018	49. 1.42 48.29.50	49. 2.42 48.30.49	31.53	48.46.45
Mar. 10	clarissimo. Hac nocte Tangentes meridianæ Lunæ incorrectæ fuerunt 52639, 51380	113564 111478	48.38. 3 48. 6.24	48.39. 2 48. 7.22	31.40	48.23.12
Mar. 14	claro, cælo nubilo	107473 105512	47. 3.46 46.32.11	47. 4.42 46.33. 6	31.36	46.42.54
Mar. 15	pallido	105995 104067	46.40. 1 46. 8.30	46.40.57 46. 9.24	31.33	46.25.11
Mar. 16	claro, cælo nubilo	104625 102638	46.17.41 45.44.45	46.18.36 45.45.39	32.57	46. 2. 7
Mar. 21	ut antea	97585 95808	44.17.59 43.46.24	44.18.50 43.47.15	31.35	44. 3. 3

Ec

Mar.

1699		Tangen- tes corre- dis a pe- numbra	Diff.	Diff.	Diam.	Diff.
			a vertice apparens limborum.	a vertice vera lim- borum	app. Solis	a vertice vera cen- tri
			G I II	G I II	I II	G I II
Mar. 24	ut antea	93649 91934	43. 7.17 42.35.37	43. 8. 6 42.36.25	31.42	42.52.15
Mar. 25	ut antea	92374 90676	42.43.48 42.12. 2	42.44.37 42.12.49	31.48	42.28.43
Mar. 26	languido	91111 89444	42.20.13 41.48.38	42.21. 0 41.49.25	31.35	42. 5.13
Mar. 27	clarissimo	89886 88226	41.57. 3 41.25.14	41.57.50 41.25.59	31.51	41.41.54
Mar. 28	pallido	88654 87024	41.33.30 41. 1.52	41.34.16 41. 2.36	31.40	41.18.26
Mar. 29	claro	87453 85841	41.10.14 40.38.35	41.11. 0 40.39.20	31.40	40.55.10
Mar. 30	fulgidissimo	86264 84667	40.46.58 40.15.13	40.47.44 40.15.57	31.47	40.31.50
Mar. 31	fulgidissimo	85094 83517	40.23.44 39.52. 4	40.24.29 39.52.48	31.41	40. 8.38
Apr. 4	languidissimo	80584 79090	38.51.47 38.10.26	38.52.30 38.21. 8	31.22	38.36.49
Apr. 5	Sole languidissimo	79491 78027	38.28.54 37.57.49	38.29.36 37.58.30	31. 6	38.14. 3
Apr. 9	clarissimo	75313 73903	36.59. 4 36.27.56	36.59.43 36.28.34	31. 9	36.44. 8
Apr. 13	clarissimo	71395 70020	35.31.30 35. 0. 1	35.32. 6 35. 0.36	31.30	35.16.21
Apr. 15	claro	69528 68180	34.48.37 34.17.10	34.49.12 34.17.45	31.27	34.33.29
Apr. 23	clarissimo celo nubilo	62625 61377	32. 3.25 31.32.25	32. 3.57 31.32.56	31. 1	31.48.26
Maj. 2	languido	55950 54780	29.13.37 28.42.50	29.14. 5 28.43.18	30.47	28.58.42

Maj.

1699		Tangen- tes cor- re ctæ ap- pe numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	G	I	II	
Maj. 3	clarissimo	55280 54106	28.56.2	28.24.58		28.56.30	28.25.26		31.4		28.40.58			
Maj. 4	ut antea	54612 53452	28.38.23	28.7.31		28.38.51	28.7.58		30.53		28.23.25			
Maj. 5	languido	53988 52798	28.21.49	27.50.0		28.22.16	27.50.27		31.49		28.6.21			
Maj. 6	claro celo nubilo	53350 52183	28.4.49	27.33.27		28.5.16	27.33.54		31.22		27.49.35			
Maj. 7	languidissimo	52721 51580	27.47.55	27.17.6		27.48.22	27.17.32		30.50		27.32.57			
Maj. 12	clarissimo	49835 48711	26.29.23	25.58.17		26.29.48	25.58.41		31.7		26.14.14			
Maj. 13	languido	49292 48187	26.14.23	25.43.42		26.14.47	25.44.6		30.42		25.59.26			
Maj. 17	claro	47288 46190	25.18.31	24.47.33		25.18.54	24.47.56		30.58		25.3.25			
Maj. 21	clarissimo	45073 43994	24.15.46	23.44.48		24.16.8	23.45.10		30.58		24.0.39			
Maj. 23	clarissimo	44669 43592	24.4.12	23.33.12		24.4.34	23.33.34		31.0		23.49.4			
Maj. 24	ut antea	44280 43205	23.53.2	23.22.1		23.53.24	23.22.22		31.2		23.37.53			
Maj. 25	ut antea	43913 42839	23.42.28	23.11.24		23.42.50	23.11.45		31.5		23.27.17			
Maj. 26	claro	43552 42480	23.32.4	23.0.58		23.32.26	23.1.19		31.7		23.16.52			
Maj. 28	pallidissimo	42861 41798	23.12.1	22.41.3		23.12.22	22.41.24		30.58		22.56.53			
Maj. 29	claro	42541 41480	23.2.44	22.31.44		23.3.5	22.32.5		31.0		22.47.35			

Ec 2

Maj.

		Tangen- tes cor- re a pe- numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	III	G	I	II
1699														
Maj. 30	clarissimo, cælo nubilo	42240 41171	22.53.58	22.22.39		22.54.15	22.22.59		31.20			22.38.39		
Maj. 31	ut supra	41939 40886	22.45.11	22.14.16		22.45.32	22.14.36		30.56			22.30.4		
Jun. 1	claro, nubibus intercurrentib.	41391 40336	22.19.11	21.58.3		22.19.31	21.58.23		31.8			22.13.57		
Jun. 4	pallido	40906 39854	22.14.52	21.43.46		22.15.12	21.44.6		31.6			21.59.39		
Jun. 5	clarissimo	40675 39620	22.8.3	21.36.49		22.8.23	21.37.9		31.14			21.52.46		
Jun. 6	Sole clarissimo	40467 39412	22.1.54	21.30.37		22.2.14	21.30.57		31.17			21.46.35		
Jun. 7	ut antea	40265 39218	21.55.56	21.24.50		21.56.16	21.25.9		31.7			21.40.42		
Jun. 8	pallido	4008 39070	21.50.7	21.19.15		21.50.27	21.19.34		30.53			21.35.0		
Jun. 9	claro	39903 38859	21.45.12	21.14.9		21.45.32	21.14.28		31.4			21.30.0		
Jun. 11	claro	39590 38580	21.35.55	21.5.49		21.36.15	21.6.8		30.7			21.21.11		
Jun. 12	clarissimo	39462 38435	21.32.8	21.1.29		21.32.28	21.1.48		30.40			21.17.8		
Jun. 13	clarissimo	39368 38319	21.29.20	20.57.19		21.29.39	20.58.18		31.21			21.13.58		
Jun. 14	pallido	39250 38218	21.25.49	20.54.57		21.26.8	20.55.16		30.52			21.10.42		
Jun. 16	claro	39092 38060	21.21.6	20.50.13		21.21.25	20.50.32		30.53			21.5.58		
Jun. 18	claro	38984 37937	21.17.53	20.47.8		21.18.12	20.47.27		30.45			21.2.49		

Jun.

		Tangen tes corrc diæ a pe numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
1699						
Jun. 19	fulgidissimo	38950 37918	21.16.51 20.45.57	21.17.11 20.46.16	30.54	21. 1.44
Jun. 20	claro, cælo nubilo	38934 37896	21.16.23 20.45.17	21.16.43 20.45.36	31. 6	21. 1.10
Jun. 21	ut antea	38928 37898	21.16.12 20.45.21	21.16.32 20.45.40	30.51	21. 1. 7
Jun. 22	clarissimo	38939 37897	21.16.32 20.45.19	21.16.52 20.45.38	31.14	21. 1.25
Jun. 23	ut antea	38957 37923	21.17. 4 20.46. 6	21.17.23 20.46.25	30.58	21. 1.54
Jun. 24	clarissimo	38997 37959	21.18.16 20.47.11	21.18.35 20.47.30	31. 5	21. 3. 2
Jun. 25	sublanguido	39041 38005	21.19.34 20.48.35	21.19.53 20.48.54	30.59	21. 4.23
Jun. 29	clarissimo	39382 38341	21.29.45 20.58.38	21.30. 4 20.58.57	31. 7	21.14.29
Jun. 30	clarissimo, specie tremula	39505 38467	21.33.24 21. 2.25	21.33.44 21. 2.44	31. 0	21.18.14
Jul. 1	claro, cælo nubilo	39632 38599	21.37.10 21. 6.21	21.37.30 21. 6.30	31. 0	21.21. 0
Jul. 3	ut antea	39950 38911	21.46.37 21.15.44	21.46.57 21.16. 3	30.54	21.31.30
Jul. 4	sublanguido	40127 39073	21.51.51 21.20.32	21.52.11 21.20.51	31.20	21.36.31
Jul. 5	clarissimo	40315 39262	21.57.25 21.26.10	21.57.41 21.26.29	31.12	21.42. 5
Jul. 6	pallido	40511 39474	22. 3.12 21.32.29	22. 3.32 21.32.49	30.43	21.48.11
Jul. 7	clarissimo	40724 39674	22. 9.30 21.38.25	22. 9.50 21.38.45	31. 5	21.54.17

Jul.

		Tangen tes cor re & a pe numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim borum			Diam. app. Solis		Diff. a vertice vera cen tri		
			G	I	II	G	I	II	I	II	G	I	II
1699													
Jul. 9	clarissimo	41190 40150	22.23.12	22.23.32	22.23.52	22.23.32	22.23.52	22.23.52	30.40		22. 8.12		
Jul. 10	Sole subpallido	41438 40412	22.30.30	22.30.51	22.31.12	22.30.51	22.31.12	22.31.32	30.14		22.15.44		
Jul. 11	languidissimo	41714 40682	22.38.35	22.38.56	22.39.17	22.38.56	22.39.17	22.39.37	30.21		22.23.45		
Jul. 12	clarissimo	42009 40956	22.47.13	22.47.34	22.47.55	22.47.34	22.47.55	22.48.15	30.54		22. 32. 7		
Jul. 13	clarissimo	42304 41246	22.55.32	22.55.53	22.56.14	22.55.53	22.56.14	22.56.34	30.32		22.40.37		
Jul. 16	clarissimo	43273 42204	23.23.59	23.24.20	23.24.41	23.24.20	23.24.41	23.25.01	31. 5		23. 8.47		
Jul. 18	pallido	43982 42907	23.44.27	23.44.49	23.45.10	23.44.49	23.45.10	23.45.31	31. 6		23.29.16		
Jul. 21	clarissimo cælo nubo	45154 44071	24.18. 5	24.18.27	24.18.48	24.18.27	24.18.48	24.19.09	31. 4		24. 2.55		
Jul. 22	ut antea	45577 44491	24.30. 9	24.30.31	24.30.52	24.30.31	24.30.52	24.31.13	31. 3		24.14.59		
Jul. 23	clarissimo	46009 44915	24.42.25	24.42.48	24.43.10	24.42.48	24.43.10	24.43.31	31.11		24.27.22		
Jul. 24	ut antea	46453 45354	24.54.59	24.55.21	24.55.42	24.55.21	24.55.42	24.56.03	31.23		24.39.45		
Jul. 26	ut antea	47380 46277	25.21. 6	25.21.29	25.21.50	25.21.29	25.21.50	25.22.11	31. 6		25. 5.56		
Jul. 27	ut antea	47852 46752	25.34.20	25.34.44	25.35.07	25.34.44	25.35.07	25.35.28	30.55		25.19.16		
Jul. 28	claro	48357 47247	25.48.26	25.48.50	25.49.13	25.48.50	25.49.13	25.49.34	30. 5		25.32.47		
Jul. 29	languidissimo	48845 47686	26. 2. 0	26. 2.24	26. 2.48	26. 2.24	26. 2.48	26. 3.12	32.21		25.46.13		

Jul.

		Tangen- tes corre- ctæ a pe- numbra	Diff. a vertice apparentis limborum			Diff. a vertice vera lim- borum			Diam. app. Solis		Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	G	I	II
1699													
Jul. 31	clarissimo	49923 48797	26.31.48			26.32.13			31. 9		26.16.38		
Aug. 4	claro	52190 51050	27.33.37			27.34. 2			30.56		27.18.34		
Aug. 6	sublanguido	53418 52260	28. 6.37			28. 7. 4			31. 6		27.51.31		
Aug. 9	claro	55338 54164	28.57.34			28.58. 2			31.20		28.42.22		
Aug. 10	clarissimo	56010 54827	29.15.12			29.15.40			31. 7		29. 0. 6		
Aug. 11	ut antea	56689 55508	29.32.55			29.33.24			30.54		29.17.57		
Aug. 12	ut antea	57386 56196	29.51. 0			29.51.29			30.57		29.36. 0		
Sept. 8	languidissimo	81502 80032	39.10.51			39.11.34			30.35		38.56.16		
Sept. 9	ut antea	82619 81113	39.33.48			39.34.32			31. 1		39.19. 1		
Sept. 10	languido	83755 82217	39.56.53			39.57.37			31.20		39.41.57		
Sept. 11	clarissimo	84890 83337	40.19.41			40.20.26			31.17		40. 4.47		
Sept. 12	claro	86053 84471	40.42.47			40.43.33			31.31		40.27.47		
Sept. 13	Sole languido	87202 85636	41. 5.21			41. 6. 7			30.50		40.50.42		
Sept. 15	clarissimo	89612 87978	41.51.52			41.52.39			31.26		41.36.56		
Sept. 16	ut antea	90835 89189	42.15. 2			42.15.49			31.14		42. 0.12		

Sept.

		Tangen- tes cor- re- ctæ ap- p- numbra	Diff. a vertice apparentis limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	III	G	I	II
1699														
Sept. 17	ut antea	92091 90406	42.38.33 42. 6.56			42.39.21 42. 7.43			31.38			42.23.32		
Sept. 18	claro	93330 91647	43. 1.27 42.30.16			43. 2.16 42.31. 4			31.12			42.46.40		
Sept. 19	claro cælo nubilo	94612 92909	43.24.51 42.53.42			43.25.41 42.54.31			31.10			43.10. 6		
Sept. 20	clarissimo	95921 94182	43.48.26 43.17. 2			43.49.17 43.17.52			31.25			43.33.34		
Sept. 21	clarissimo	97243 95465	44.11.58 43.40.16			44.12.49 43.41. 6			31.43			43.56.57		
Sept. 22	ut antea	98563 96787	44.35. 7 44. 3.52			44.35.59 44. 4.43			31.16			44.20.21		
Sept. 23	Sole claro. Post eclipsim Solis insignem	99937 98113	44.58.56 44.27.16			44.59.48 44.28. 7			31.41			44.43.57		
Sept. 24	clarissimo	101305 99462	45.22.17 44.50.45			45.23.10 44.51.37			31.33			45. 7.23		
Sept. 25	pallido	102691 100821	45.45.38 45.14. 4			45.46.32 45.14.57			31.35			45.30.44		
Sept. 26	claro	104106 102211	46. 9. 9 45.37.35			46.10. 8 45.38.28			31.35			45.54.15		
Oct. 1	claro	111486 109463	48. 6.32 47.35.12			48. 7.30 47.36. 9			31.21			47.51.49		
Oct. 2	languido	113011 110981	48.29.43 47.58.46			48.30.42 47.59.44			30.58			48.15.13		
Oct. 4	claro	116125 114050	49.16. 1 48.45.10			49.17. 2 48.46.19			30.52			49. 1.45		
Oct. 9	ut antea	124330 122015	51.11.24 50.39.47			51.12.29 50.40.50			31.39			50.56.39		
Oct. 10	clarissimo	125980 123659	51.33.30 51. 2.19			51.34.36 51. 3.23			31.13			51.18.59		

Oct.

1699		Tangen tes cor- re- ctæ a pe- numbra	Diff.	Diff.	Diam.	Diff.
			a vertice apparens limborum	a vertice vera lim- borum	app. Solis	a vertice vera cen- tri
			G I II	G I II	I II	G I II
08. 11	clarissimo	127746 125368	51.56.46 51.25.21	51.57.53 51.26.26	31.27	51.41.59
08. 12	ut antea	129481 127065	52.19.14 51.47.50	52.20.22 51.48.56	31.26	51. 4.39
08. 13	claro, czlo nubilo	131237 128801	52.41.36 52.10.29	52.42.45 52.11.36	31. 9	52.27.10
08. 17	ut antea	138567 135905	54.11. 0 53.39.15	54.12.12 53.40.26	31.46	53.56.19
08. 19	clarissimo	142311 139608	54.54.18 54.23.11	54.55.33 54.24.24	31. 9	54.39.58
08. 20	clarissimo	144206 141442	55.15.38 54.44.23	55.16.54 54.45.37	31.17	55. 1.15
08. 22	pallido	148110 145213	55.58.26 55.26.49	55.59.45 55.28. 6	31.39	55.43.55
08. 23	claro specie tremula	150097 147176	56.19.38 55.48.20	56.20.58 55.49.38	31.20	56. 5.18
08. 24	Sole pallidissimo	152094 149118	56.40.33 56. 9.14	56.41.53 56.10.34	31.19	56.26.12
08. 25	claro	154143 151089	57. 1.36 56.30. 4	57. 2.58 56.31.25	31.33	56.47.11
08. 26	pallidissimo	156179 153076	57.22. 8 56.50.41	57.23.31 56.52. 3	31.28	57. 7.47
08. 27	claro	158260 155072	57.42.45 57.11. 1	57.44.10 57.12.24	31.46	57.28.17
Nov. 9	pallido	186218 182227	61.45.51 61.14.37	61.47.31 61.16.16	31.15	61.31.53
Nov. 11	clarissimo	190697 186476	62.19.40 61.47.49	62.21.23 61.49.30	31.53	62. 5.26
Nov. 14	clarissimo	197363 192907	63. 7.46 62.35.11	63. 9.32 62.36.56	32.36	62.53.14

Ff

Nov.

1699		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparenti limborum			Diff. a vertice vera lim borum			Diam. app. Solis		Diff. a vertice vera cen tri		
			G	I	II	G	I	II	I	II	G	I	II
Nov. 15	ut antea	199570 195005	63.23.	8		63.24.56 62.51.3			32.	7	63.	8.53	
Nov. 16	ut antea	201752 197126	63.38.	4		63.39.53 63.7.54			31.59		63.22.53		
Nov. 17	ut antea	203920 199240	63.52.38 63.20.51			63.53.29 63.22.39			30.50		63.38.	4	
Nov. 19	ut antea	208220 203370	64.20.49 63.48.58			64.22.42 63.50.48			31.54		64.	6.45	
Nov. 20	ut antea	210377 205444	64.34.36 64.2.44			64.36.30 64.4.35			31.55		64.20.32		
Nov. 21	ut antea	212447 207461	64.47.36 64.15.54			64.49.32 64.17.46			31.46		64.33.39		
Nov. 22	ut antea	214566 209466	65.0.43 64.28.48			65.2.40 64.30.42			31.58		64.46.41		
Nov. 23	ut antea	216625 211427	65.13.15 64.41.13			65.15.13 64.43.8			32.	5	64.59.10		
Nov. 24	ut antea	218647 213383	65.25.22 64.53.25			65.27.21 64.55.22			31.59		65.11.21		
Nov. 26	ut antea	222607 217178	65.48.34 65.16.34			65.50.35 65.18.32			32.	3	65.34.33		
Nov. 27	Sole languido	224533 219004	65.59.37 65.27.29			66.1.40 65.29.29			32.11		65.45.34		
Nov. 29	Sole claro	228199 222540	66.20.11 65.48.10			66.22.15 65.50.11			32.	4	66.	6.13	
Nov. 30	clarissimo, czło nubilo	229955 224242	66.29.50 65.57.57			66.31.56 66.0.0			31.56		66.15.58		
Dec. 5	claro, czło nebuloso	237905 231831	67.12.4 66.40.2			67.14.14 66.42.9			32.	5	66.58.11		
Dec. 8	ut antea	241855 23650	67.32.11 67.0.20			67.34.24 67.2.29			31.55		67.18.26		

Dec.

		<i>Tangen tes corre de a pe numbra</i>	<i>Dij. a vertice apparens limborum</i>	<i>Dij. a vertice vera lim borum</i>	<i>Diam. app. Solis</i>	<i>Dij. a vertice vera cen tri</i>
			G I II	G I II	I II	G I II
1699						
Dec. 11	sublanguido	245082 238732	67.48.11 67.16.23	67.50.26 67.18.34	31.52	67.34.30
Dec. 12	clarissimo	246010 239518	67.52.46 67.20.21	67.55. 1 67.22.32	32.29	67.38.46
Dec. 16	claro	248742 242188	68. 5.56 67.33.51	68. 8.12 67.36. 4	32. 8	67.52. 8
Dec. 27	fulgidissimo	248248 241697	68. 3.34 67.31.23	68. 5.50 67.33.36	32.14	67.49.43
Dec. 28	Sole pallido	247562 241088	68. 0.15 67.28.19	68. 2.31 67.30.31	32. 0	67.46.31
Dec. 30	Sole clarissimo	246046 239610	67.52.43 67.20.49	67.54.59 67.23. 0	31.59	67.38.59
1700						
Jan. 1	Sole clarissimo	244113 237769	67.43.25 67.11.21	67.45.39 67.13.32	32. 7	67.29.35
Jan. 2	ut antea	243050 236758	67.38. 9 67. 6. 8	67.40.21 67. 8.18	32. 4	67.24.20
Jan. 3	ut antea	241879 235635	67.32.18 67. 0.16	67.34.31 67. 2.25	32. 6	67.18.28
Jan. 4	ut antea	240614 234460	67.25.55 66.54. 4	67.28. 7 66.56.12	31.55	67.12. 9
Jan. 5	ut antea	239296 233171	67.19.13 66.47.13	67.21.24 66.49.21	32. 3	67. 5.23
Jan. 6	claro	237901 231860	67.12. 3 66.40.11	67.14.13 66.42.18	31.55	66.58.15
Jan. 7	clarissimo	236481 230460	67. 4.41 66.32.36	67. 6.50 66.34.42	32. 8	66.50.46
Jan. 8	ut antea	234950 228983	66.56.39 66.24.30	66.58.48 66.26.35	32.13	66.42.41

Ff 2

Mar.

1700		Longi- tes corre- ctæ a po- nombra	Dist. a vertice apparenti limborum			Dist. a vertice vera lim- borum			Dist. app. Solis			Dist. a vertice vera cen- t.		
			G	I	II	G	I	II	I	II		G	I	II
Jan. 9	ut antea	233347 227462	66.48.10			66.50.18			32. 8			66.34.14		
Jan. 10	ut antea	231657 225868	66.39. 5			66.41.12			31.59			66.25.12		
Jan. 12	ut antea	228161 222518	66.19.59			66.22. 4			31.59			66. 6. 4		
Jan. 13	ut antea	226366 220760	66. 9.57			66.12. 1			32.10			65.55.56		
Jan. 14	ut antea	224507 218971	65.59.27			66. 1.30			32.13			61.45.23		
Jan. 15	ut antea, specie tremula	222558 217124	65.48.17			65.50.19			32. 5			65.34.16		
Jan. 16	clarissimo	220598 215252	65.36.53			65.38.54			32. 1			65.22.53		
Jan. 17	ut antea	218619 213349	65.25.11			65.27.11			32. 3			65.11. 9		
Jan. 18	ut antea	216581 211408	65.12.59			65.14.57			31.56			64.58.59		
Jan. 19	ut antea	214529 209410	65. 0.29			65. 2.26			32. 6			64.46.23		
Jan. 20	ut antea	212428 207594	64.47.29			64.49.25			30.46			64.34. 2		
Jan. 21	clarissimo, cælo nubilo	210277 205349	64.33.57			64.35.51			31.54			64.19.54		
Jan. 22	clarissimo	208166 203275	64.20.28			64.22.21			32.12			64. 6.15		
Jan. 23	ut antea	206025 201229	64. 6.33			64. 8.25			32. 6			63.52.22		
Jan. 24	subpallido	203795 199124	63.51.45			63.53.38			31.46			63.37.45		

Jan.

1700		Tangen- tes cor- re- cte a pe- numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis		Diff. a vertice vera cen- tri	
			G	I II	G	I II	I II		G	I II
Jan. 25	Sole clarissimo specie tre- mula	201624 196992	63.37.11		63.39.0		32.4		63.22.38	
Jan. 27	clarissimo	197217 192741	63.6.43		63.8.32		32.6		62.52.29	
Jan. 30	ut antea	190510 186295	62.18.17		62.20.0		31.52		62.4.4	
Jan. 31	ut antea	188275 184136	62.1.33		62.3.1		31.5		61.47.18	
Feb. 4	ut antea	179401 17555	60.51.55		60.53.2		2.1		60.37.32	
Feb. 5	Sole claro czelo nubilo	7718 7341	60.33.40		60.35.16		31.54		60.19.19	
Feb. 6	clarissimo	7497 7128	60.15.7		60.16.42		31.50		60.0.47	
Feb. 8	languido	7060 6705	59.37.21		59.38.53		31.44		59.23.1	
Feb. 10	fulgidissimo	66302 6288	58.58.51		59.0.21		31.43		58.44.28	
Feb. 11	claro	64162 60832	58.39.8		58.40.37		31.30		58.24.52	
Feb. 12	claro, czelo nubilo	162052 158763	58.19.19		58.20.46		31.41		58.4.55	
Feb. 17	clarissimo	151711 148678	56.36.36		56.37.5		32.6		56.21.54	
Feb. 18	ut antea	140688 146720	56.15.17		56.16.37		31.57		56.0.38	
Feb. 21	ut antea	143762 140972	55.10.40		55.11.56		31.43		54.56.4	
Feb. 22	pallido	141853 139113	54.49.4		54.50.18		31.40		54.34.28	

Feb.

1700		Tangen tes cor- re & ap- p. num- bera	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis		Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	G	I	II
Feb. 23	pallido	139950 137242	54.27.10			54.28.23			31.54		54.12.26		
Feb. 26	claro, cælo nubilo	134345 131797	53.20.16			53.21.27			31.39		53. 5.37		
Mar. 1	ut antea	128950 126532	52.12.24			52.13.32			31.37		51.57.43		
Mar. 4	ut antea	123750 121444	51. 3.32			51. 4.36			31.40		50.48.46		
Mar. 9	ut antea	115521 113412	49. 7. 9			49. 8. 9			31.24		48.52.27		
Mar. 19	sublanguido	100751 98820	45.12.52			45.13.44			33.16		44.57. 6		
Mar. 21	pallidissimo	97918 96152	44.23.51			44.24.42			31.17		44. 9. 3		
Mar. 22	clarissimo	96570 94818	44. 0. 1			44. 0.52			31.27		43.45. 8		
Mar. 23	clarissimo	95251 93516	43.36.24			43.37.14			31.34		43.21.27		
Mar. 24	clarissimo	93951 92241	43.12.49			43.13.38			31.31		42.57.52		
Mar. 25	clarissimo	92673 90977	42.49.20			42.50. 9			31.39		42.34.19		
Mar. 27	Sole pallidissimo	90155 88530	42. 2.10			42. 2.57			31. 3		41.47.25		
Apr. 1	nubilo	84197 82660	40. 5.47			40. 6.31			30.59		39.51. 2		
Apr. 8	claro, cælo nubilo	76588 75158	37.26.52			37.27.32			31.13		37.11.55		
Apr. 9	clarissimo	75563 74150	37. 4.33			37. 5.12			31. 9		36.49.37		

Apr.

1700		Tangen tes corv e a pe numbra	Diff. a vertice apparent limborum	Diff. a vertice vera lim borum	Diam. app. Sollis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
Apr. 12	clarissimo	72591 71200	35.58.35 35.27.3	35.59.12 35.27.39	31.33	35.43.25
Apr. 13	pallido	71626 70257	35.36.45 35.5.27	35.37.21 35.6.2	31.19	35.21.41
Apr. 14	pallido	70675 69322	35.15.3 34.43.50	35.15.39 34.44.26	31.13	35.0.2
Apr. 15	pallido	69684 68388	34.52.13 34.22.3	34.52.49 34.22.38	30.11	34.37.43
Apr. 23	clarissimo	62816 61563	32.8.7 31.37.3	32.8.39 31.37.34	31.5	31.53.6
Apr. 24	clarissimo	62022 60781	31.48.29 31.17.40	31.49.1 31.18.11	30.50	31.33.36
Maj. 1	clarissimo	56804 55615	29.35.54 29.4.51	29.36.23 29.5.19	31.4	29.20.51
Maj. 2	ut antea	56120 54931	29.18.5 28.46.49	29.18.33 28.47.17	31.16	29.2.55
Maj. 3		55430 54259	28.59.58 28.29.2	29.0.27 28.29.30	30.57	28.44.58
Maj. 4	Sole claro	54769 53612	28.42.33 28.11.47	28.43.1 28.12.14	30.47	28.27.37
Maj. 5	clarissimo	54121 52968	28.25.22 27.54.33	28.25.50 27.55.0	30.50	28.10.25
Maj. 6	ut antea	53496 52335	28.8.42 27.37.32	28.9.9 27.37.59	31.10	27.53.34
Maj. 7	pallido	52879 51732	27.52.10 27.21.13	27.52.37 27.21.39	30.58	27.37.8
Maj. 9	clarissimo	51672 50538	27.19.36 26.48.39	27.20.2 26.49.5	30.57	27.4.33
Maj. 10	pallido	51087 49981	27.3.40 26.33.23	27.4.6 26.33.49	30.17	26.48.57

Maj.

1700		Tangentes corry Bæ ap- penumbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis		Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	G	I	II
Maj. 1	claro	49427 48320	26.18. 7	25.47.23		26.18.32	25.47.47		30.45		26. 3. 9		
Maj. 11	clarissimo	47893 46785	25.35.28	25. 4.21		25.35.52	25. 4.44		31. 8		25.20.18		
Maj. 15	clarissimo	46466 45376	24.55.21	24.24.24		24.55.44	24.24.46		30.58		24.40.15		
Maj. 21	ut antea	46027 44937	24.42.55	24.11.51		24.43.18	24.12.13		31. 5		24.27.45		
Maj. 25	ut antea	45592 44506	24.30.33	23.59.31		24.30.56	23.59.53		31. 3		24.15.24		
Maj. 29	ut antea	45182 44084	24.18.51	23.47.23		24.19.13	23.47.44		31.29		24. 3.28		
Maj. 23	pallido	44761 43688	24. 6.50	23.35.58		24. 7.12	23.36.20		30.52		23.51.46		
Maj. 25	Sole claro	43966 42929	23.44. 0	23.14. 0		23.44.22	23.14.21		30. 1		23.29.28		
Maj. 26	Sole claro	43622 42564	23.34. 4	23. 3.23		23.34.26	23. 3.44		30.42		23.19. 5		
Maj. 31	clarissimo	42003 40950	22.47. 2	22.16. 9		22.47.23	22.16.29		30.54		22.31.56		
Jun. 1	claro	41721 40673	22.38.48	22. 7.58		22.39. 9	22. 8.18		30.51		22.23.43		
Jun. 4	clarissimo	40950 39907	22.16. 9	21.45.19		22.16.29	21.45.40		30.49		22. 1. 4		
Jun. 6	clarissimo	40504 39466	22. 2.58	21.32.14		22. 3.18	21.32.35		30.43		21.47.56		
Jun. 8	clarissimo	40118 39081	21.51.35	21.20.46		21.51.56	21.21. 6		30.50		21.36.31		
Jun. 9	ut antea	39943 38900	21.46.24	21.15.22		21.46.45	21.15.42		31. 3		21.31.13		

Jun.

1700		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim borum			Diam. app. Solis		Diff. a vertice vera cen tri		
			G	I	II	G	I	II	I	II	G	I	II
Jun. 10	ut antea	39782 38748	21.41.37	21.10.49	21.11.8	21.41.57	21.11.8	21.11.8	30.49	21.26.32			
Jun. 11	ut antea	39635 38605	21.37.16	21.6.33	21.6.52	21.37.36	21.6.52	21.6.52	30.44	21.22.14			
Jun. 12	ut supra	39491 38473	21.32.58	21.2.35	21.2.54	21.33.18	21.2.54	21.2.54	30.24	21.18.6			
Jun. 13	ut supra	39382 38349	21.29.44	20.58.53	20.59.12	21.30.4	20.59.12	20.59.12	30.52	21.14.38			
Jun. 14	ut supra	39278 38242	21.26.38	20.55.40	20.55.59	21.26.58	20.55.59	20.55.59	30.59	21.11.28			
Jun. 15	ut supra	39183 38151	21.23.48	20.52.56	20.53.15	21.24.8	20.53.15	20.53.15	30.53	21.8.41			
Jun. 18	pallidissimo	38992 37960	21.18.7	20.47.13	20.47.32	21.18.27	20.47.32	20.47.32	30.55	21.2.59			
Jun. 19	pallidissimo	38950 37933	21.16.51	20.46.24	20.46.43	21.17.11	20.46.43	20.46.43	30.28	21.1.57			
Jun. 23	claro	38950 37916	21.16.51	20.45.53	20.46.12	21.17.11	20.46.12	20.46.12	30.59	21.1.41			
Jun. 25	pallido	39023 37999	21.19.2	20.48.23	20.48.42	21.19.22	20.48.42	20.48.42	30.40	21.4.2			
Jun. 27	clarissimo	39173 38166	21.23.30	20.53.24	20.53.42	21.23.49	20.53.42	20.53.42	30.6	21.8.46			
Jun. 28	ut antea	39250 38225	21.25.48	20.55.9	20.55.28	21.26.8	20.55.28	20.55.28	30.40	21.10.48			
Jun. 29	claro	39360 38325	21.29.5	20.58.9	20.58.28	21.29.25	20.58.28	20.58.28	30.57	21.13.56			
Jun. 30	clarissimo	39480 38441	21.32.30	21.1.38	21.1.57	21.32.59	21.1.57	21.1.57	31.2	21.17.28			
Jul. 1	ut antea	39597 38555	21.36.7	21.5.39	21.5.58	21.36.27	21.5.58	21.5.58	30.39	21.21.12			

Gg

Mat.

1700		Tangen- tes cor- de a pe- numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
Jul. 2	ut antea	39743 38714	21.40.28			21.40.48			30.41			21.25.27		
Jul. 3	ut antea	39898 38875	21.45.4			21.45.25			30.29			21.30.10		
Jul. 4	claro	40079 39044	21.50.25			21.50.46			30.46			21.35.23		
Jul. 5	Sole clarissimo	40266 39216	21.55.58			21.56.19			31.12			21.40.43		
Jul. 7	ut antea	40671 39630	22.7.55			22.8.15			30.47			21.52.52		
Jul. 8	ut antea	40895 39851	22.14.32			22.14.52			30.52			21.59.26		
Jul. 9	claro	41130 40091	22.21.26			22.21.46			30.38			22.6.27		
Jul. 10	clarissimo	41384 40339	22.28.55			22.29.16			30.48			22.13.52		
Jul. 11	claro, exlo nubilo	41661 40611	22.37.2			22.37.23			30.54			22.21.56		
Jul. 12	clarissimo	41939 40889	22.45.10			22.45.31			30.50			22.30.6		
Jul. 13	ut antea	42235 41168	22.53.45			22.54.6			31.12			22.38.30		
Jul. 14	ut antea	42530 41493	23.1.29			23.2.45			30.19			22.47.35		
Jul. 15	ut antea	42857 41775	23.11.55			23.12.16			31.34			22.56.29		
Jul. 16	claro	43188 42130	23.21.31			23.21.52			30.47			23.6.28		
Jul. 18	Sole pallido	43088 42857	23.41.45			23.42.7			30.27			23.26.53		

Jul.

1700		Tangen- tes cor- re Bæ a pe- numbra	Diff. a vertice apparens limberum			Diff. a vertice vera lim- berum			Diam. app. Sollis	Diff. a vertice vera cen- tri		
			G	I	II	G	I	II		G	I	II
Jul. 19	clarissimo	44262 43204	23.52.31			23.52.53			30.34	23.37.36		
Jul. 20	claro	44657 43583	24. 3.51			24. 4.13			30.54	23.48.46		
Jul. 21	ut antea	45059 43977	24.15.21			24.15.43			31. 2	24. 0.12		
Jul. 22	ut antea	45470 44392	24.27. 5			24.27.27			30.57	24.12. 1		
Jul. 23	pallido	45897 44814	24.39.14			24.39.37			30.54	24.24.10		
Jul. 24	clarissimo	46337 45249	24.51.42			24.52. 5			30.57	24.36.36		
Jul. 27	pallido	47737 46627	25.31. 7			25.31.31			31.15	25.15.53		
Jul. 28	clarissimo	48233 47129	25.44.58			25.45.22			30.57	25.29.53		
Jul. 29	nebuloso	48739 47629	25.59. 3			25.59.27			30.59	25.43.57		
Jul. 30	claro	49257 48139	26.13.24			26.13.48			31. 4	25.58.16		
Aug. 1	pallido	50336 49210	26.41. 8			26.43.33			31. 2	26.28. 2		
Aug. 2	claro	50904 49765	26.58.41			26.59. 7			31.16	26.43.29		
Aug. 3	claro	51468 50329	27.14. 2			27.14.28			31. 5	26.58.55		
Aug. 4	claro	52051 50907	27.29.50			27.30.16			31. 5	27.14.43		
Aug. 6	Sole claro	53268 52107	28. 2.36			28. 3. 3			31.15	27.47.25		

G g a

Aug.

1700		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
Aug. 8	clarissimo	54329 53364	28.36.11 28. 5.10	28.36.39 28. 5.37	31. 2	28.21. 8
Aug. 9	ut antea	55179 54005	28.53.22 28.22.16	28.53.51 28.22.44	31. 7	28.38.17
Aug. 10	ut antea	55853 54662	29.11.13 28.39.43	29.11.41 28.40.11	31.30	28.55.56
Aug. 11	ut antea	56525 55342	29.28.39 28.57.39	29.29. 7 28.58. 8	30.59	29.13.37
Aug. 12	ut antea	57217 56025	29.46.37 29.15.35	29.47. 6 29.16. 3	31. 5	29.31.54
Aug. 14	ut antea	58649 57447	30.23.28 29.52.34	30.23.57 29.53. 3	30.54	30. 8.30
Aug. 15	pallido	59377 58168	30.42. 2 30.11. 9	30.42.32 30.11.38	30.54	30.27. 5
Aug. 16	clarissimo	60133 58901	31. 1.11 30.29.54	31. 1.41 30.30.23	31.18	30.46. 2
Aug. 17	ut antea	60885 59667	31.20. 6 30.49.24	31.20.56 30.50. 4	30.52	31. 5.20
Aug. 18	ut antea	61664 60415	31.39.35 31. 8.18	31.40. 6 31. 8.48	31.18	31.24.27
Aug. 19	ut antea	62446 61206	31.58.59 31.28. 9	31.59.31 31.28.40	30.51	31.44. 5
Aug. 21	ut antea	64069 62798	32.38.50 32. 7.26	32.39.23 32. 7.58	31.25	32.23.40
Aug. 23	claro	65745 64454	33.19.23 32.48.12	33.19.56 32.48.45	31.11	33. 4.20
Aug. 25	cælo nubilo	67472 66164	34. 0.30 33.29.24	34. 1. 5 33.29.57	31. 8	33.45.31
Aug. 26	fulgidissimo	68351 67038	34.21.17 33.50.14	34.21.53 33.50.49	31. 4	34. 6.21

Aug.

1700		Tangen tes corre ctæ ap numbra	Diff. a vertice apparenti limbosum		Diff. a vertice vera lim borum		Diam. app. Solis	Diff. a vertice vera cen tri	
			G	I II	G	I II		G	I II
Aug. 28	clarissimo	70177 68829	35. 3.36 34.32.22		35. 4.11 34.32.58		31.13	34.48.34	
Aug. 31	pallidissimo	73008 71656	36. 7.57 35.37.27		36. 8.34 35.38. 3		30.31	35.53.18	
Sept. 2	clarissimo	74970 73575	36.51.32 36.20.33		36.52.11 36.21. 1		31.10	36.36.36	
Sept. 3	claro	75992 74568	37.13.55 36.42.40		37.14.34 36.43.18		31.16	36.58.56	
Sept. 4	clarissimo	77010 75577	37.36. 0 37. 4.51		37.36.40 37. 5.30		31.10	37.21. 5	
Sept. 5	cælo subnubilo	78045 76601	37.58.13 37.27. 9		37.58.54 37.27.49		31. 5	37.43.21	
Sept. 7	claro	80163 78681	38.43. 0 38.11.48		38.43.42 38.12.29		31.13	38.28. 5	
Sept. 8	ut antea	81250 79791	39. 5.38 38.35.13		39. 6.21 38.35.55		30.26	38.51. 8	
Sept. 9	ut antea	82347 80840	39.28.13 38.57. 8		39.28.56 38.57.51		31. 5	39.13.23	
Sept. 10	pallido	83469 81942	39.51. 5 39.19.55		39.51.49 39.20.38		31.11	39.36.13	
Sept. 11	Sole claro	84601 83060	40.13.54 39.42.47		40.14.38 39.43.30		31. 8	39.59. 4	
Sept. 12	clarissimo	85752 84194	40.36.49 40. 5.43		40.37.34 40. 6.27		31. 7	40.22. 0	
Sept. 13	ut antea	86923 85333	40.59.53 40.28.31		41. 0.39 40.29.16		31.23	40.44.57	
Sept. 15	pallido	89295 87678	41.45.48 41.14.37		41.46.36 41.15.23		31.13	41.31. 0	
Sept. 16	clarissimo	90534 88891	42. 9.20 41.38. 3		42.10. 7 41.38.50		31.27	41.54.28	

Sept.

1700		Tangen- tes corre- ctæ a pe- numbra	Diff. a vertice apparenti limborum			Diff. a vertice vera lim- borum			Diam. app. Solis	Diff. a vertice vera cen- tri		
			G	I	II	G	I	II		G	I	II
Sept. 17	pallidissimo	91779 90098	42.32.43			42.33.31			31.38	42.17.42		
			42. 1. 6			42. 1. 53						
Sept. 18	claro	93026 91344	42.55.51			42.56.40			31.17	42.41. 1		
			42.24.35			42.25.23						
Sept. 19	clarissimo	94301 92598	43.19.12			43.20. 2			31.16	43. 4.24		
			42.47.57			42.48.46						
Sept. 20	clarissimo	95600 93862	43.42.41			43.43.31			31.31	43.27.45		
			43.11.11			43.12. 0						
Sept. 23	pallido	99587 97799	44.52.53			44.53.45			31. 9	44.38.10		
			44.21.45			44.22.36						
Sept. 25	clarissimo	102351 100497	45.39.56			45.40.49			31.26	45.25. 6		
			45. 8.31			45. 9.23						
Sept. 27	ut antea	105177 103279	46.26.43			46.27.38			31.17	46.11.59		
			45.55.27			45.56.21						
Sept. 28	ut antea	106624 104695	46.50.11			46.51. 7			31.22	46.35.26		
			46.18.50			46.19.43						
Sept. 29	nubilo	108084 106125	47.13.30			47.14.26			31.23	46.58.44		
			46.42. 8			46.43. 3						
Sept. 30	nubilo	109585 107589	47.37. 7			47.38. 5			31.32	47.22.19		
			47. 5.37			47. 6.33						
Oct. 1	claro	111104 109079	48. 0.38			48. 1.36			31.28	47.45.52		
			47.29.11			47.30. 8						
Oct. 6	clarissimo	118926 116754	49.56.27			49.57.30			31.18	49.41.51		
			49.25.11			49.26.12						
Oct. 7	clarissimo	120562 118347	50.19.34			50.20.38			31.25	50. 4.55		
			49.48.11			49.49.13						
Oct. 8	claro	122249 119950	50.43. 0			50.44. 5			32. 4	50.28. 3		
			50.10.57			50.12. 1						
Oct. 9	nubilo	123877 121608	51. 5.16			51. 6.20			31. 8	50.50.46		
			50.34. 8			50.35.12						

		Tangen tes corre ctæ ap numbra	Diff. a vertice apparens limberum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
1700			G 1 11	G 1 11	1 11	G 1 11
08.12	claro, czelo nubilo	129048 126650	52.13.40 51.42.22	52.14.48 51.43.28	31.20	51.59.8
08.13	claro	130817 128373	52.36.17 52. 4.55	52.37.26 52. 6. 2	31.24	52.21.42
08.14	clarissimo	132608 130101	52.58.48 52.27.11	52.59.58 52.28.19	31.39	52.44.8
08.17	ut antea. Deest hzc ob servatio in meis adversariis, sed eam descripsi e schedis calculorum longitudinis So lis quos dietim a fororibus subduci curabam	138094 135454	54. 5.24 53.33.47	54. 6.36 53.34.58	31.38	53.50.47
08.23	Sole clarissimo	149613 146675	56.14.30 55.42.53	56.15.50 55.44.10	31.40	56. 0. 0
08.27	Sole clarissimo. Hæc quo que e schedis supputationum diurnarum	157748 154564	57.37.42 57. 6.53	57.39. 6 57. 8.15	30.51	57.23.40
08.31	clarissimo. Et hæc ex iis dem schedis	166394 162712	58.59.42 58.25.33	59. 1.12 58.26.59	34.13	
Nov.1	Sole claro	168237 164763	59.16.22 58.44.41	59.17.53 58.46. 0	31.53	59. 1.56
Nov.8	Sole pallido	183457 179553	61.24.21 60.53. 5	61.26. 1 60.54.43	31.18	61.10.22
Nov.9	claro	185521 181678	61.43. 0 61.10.14	61.43.42 61.11.53	31.49	61.27.47
Nov.13	clarissimo	194590 190243	62.48. 3 62.16.17	62.49.50 62.18. 0	31.50	62.33.55
Nov.14	clarissimo	196772 192368	63. 3.36 62.31.59	63. 5.22 62.33.43	31.39	62.49.32

Nov.

		Tangen tes cor- re et a pe- numbra	Diff. a vertice apparenti limborum.	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
1700			G I II	G I II	I II	G I II
Nov. 19	ut antea	207710	64.17.31	64.19.24	31.57	64. 3.25
		202872	63.45.37	63.47.27		
Nov. 20	claro	209848	64.31.24	64.33. 8	31.55	64.17.10
		204935	63.59.22	64. 1.13		
Dec. 5	clarissimo	237560	67.10.17	67.12.27	32.13	66.56.20
		231477	66.38. 7	66.40.14		
Dec. 6	ut antea	238950	67.17.27	67.19.38	32. 6	67. 3.35
		232850	66.45.24	66.47.32		
Dec. 8	claro	241543	67.30.37	67.32.50	32. 8	67.16.46
		235309	66.58.33	67. 0.42		
Dec. 11	pallido	244867	67.47. 8	67.49.22	32.13	67.33.15
		238467	67.14.58	67.17. 9		
Dec. 27	claro	248319	68. 3.54	68. 6.10	32. 7	67.50. 6
		241781	67.31.50	67.34. 3		
Dec. 29	claro	247048	67.57.46	68. 0. 2	32. 9	67.43.57
		240574	67.25.41	67.27.53		
1701						
Jan. 2	Sole clarissimo	243333	67.39.34	67.41.48	32.21	67.25.37
		236979	67. 7.17	67. 9.27		
Jan. 3	ut antea	242200	67.33.55	67.36. 8	32.11	67.20. 2
		235928	67. 1.48	67. 3.57		
Jan. 5	ut antea	239675	67.21. 9	67.23.20	32.14	67. 7.13
		233499	66.48.58	66.51. 6		
Jan. 6	ut antea	238264	67.13.55	67.16. 5	32.10	67. 0. 0
		232160	66.41.48	66.43.55		
Jan. 7	ut antea	236843	67. 6.43	67. 8.53	32.23	66.52.41
		230793	66.34.24	66.36.30		
Jan. 8	ut antea	235325	66.58.38	67. 0.47	32. 8	66.44.43
		229361	66.26.35	66.28.39		

Jan.

1701		Tangen- tes cor- re a pe numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G I II	G I II	I II	G I II	
Jan. 9	ut antea	233740 227835	66.50.15 66.18. 9	66.52.23 66.20.14	32. 9	66.36.18
Jan. 10	Sole pallido	232089 226285	66.41.25 66. 9.30	66.43.32 66.11.34	31.58	66.27.33
Jan. 12	claro	228600 222912	66.22.24 65.50.19	66.24.29 65.52.21	32. 8	66. 8.25
Jan. 14	clarissimo	224955 219410	66. 1.59 65.29.53	66. 4. 2 65.31.53	32. 9	65.47.57
Feb. 7	Sole clarissimo	173305 169673	60. 0.52 59.29.11	60. 2.26 59.30.43	31.43	59.46.34
Feb. 8	ut antea	171111 167566	59.41.51 59.10.19	59.43.24 59.11.50	31.34	59.27.37
Feb. 10	ut antea	166801 163353	59. 3.24 58.31.35	59. 4.54 58.33. 3	31.52	58.48.58
Feb. 11	ut antea	164632 161321	58.43.57 58.12.22	58.45.26 58.13.49	31.37	58.29.37
Feb. 12	ut antea. Hanc observa- tionem huc retuli e schedis calculorum cum in adversa riis desit	162570 159250	58.24. 3 57.52.24	58.25.31 57.53.46	31.45	58. 9.38
Feb. 13	ut antea	160461 157195	58. 4. 7 57.32.15	58. 5.33 57.33.39	31.54	57.49.36
Feb. 16	ut antea	154220 151142	57. 2.23 56.30.37	57. 3.45 56.31.58	31.48	56.47.52
Feb. 17	ut antea	152183 149149	56.41.28 56. 9.34	56.42.49 56.10.53	31.56	56.26.51
Feb. 18	ut antea	150150 147170	56.20.11 55.48.16	56.21.31 55.49.31	31.57	56. 5.32
Feb. 21	ut antea	144234 141449	55.15.57 54.44.27	55.17.13 54.45.41	31.32	55. 2.27

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Feb.

1701		Tangen tes corv E & a p numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G I II	G I II	I II	G I II	
Feb. 27	ut antea	132960	53. 3.11	50. 4.21	31.43	52.48.29
		130439	52.31.29	52.32.38		
Mar. 6	ut antea	120808	50.23. 0	50.24. 4	31.52	50. 8. 8
		118554	49.51. 9	49.52.12		
Mar. 10	Sole pallidissimo	114319	48.49.21	48.50.21	31. 4	48.34.49
		112257	48.18.18	48.19.17		
Mar. 11	clarissimo	112772	48.26. 6	48.27. 5	31.35	48.11.17
		110707	47.54.32	47.55.30		
Mar. 12	ut antea	111228	48. 2.34	48. 3.32	31.57	47.47.33
		109171	47.30.38	47.31.35		
Mar. 18	pallidissimo	102366	45.40.11	45.41. 4	31.10	45.23.29
		100527	45. 9. 2	45. 9.54		
Mar. 19	pallido	100982	45.16.48	45.17.41	31.50	45. 1.46
		99130	44.44.59	44.45.51		
Mar. 20	pallido	99581	44.52.47	44.53.39	31.12	44.38. 3
		97790	44.21.36	44.22.27		
Mar. 21	clarissimo	98240	44.29.28	44.30.19	31.33	44.14.32
		96452	43.57.55	43.58.46		
Mar. 22	ut antea	96904	44. 5.57	44. 6.48	31.41	43.50.57
		95134	43.34.17	43.35. 7		
Mar. 23	clarissimo	95576	43.42.15	43.43. 5	31.48	43.27.11
		93823	43.10. 0	43.11.17		
Mar. 24	pallidissimo	94258	43.18.25	43.19.15	31. 9	43. 3.40
		92562	42.47.17	42.48. 6		
Mar. 25	fulgidissimo	92985	42.55. 6	42.55.55	31.41	42.40. 4
		91282	42.23.26	42.24.14		
Mar. 26	claro	91724	42.31.42	42.32.30	31.27	42.16.46
		90054	42. 0.16	42. 1. 3		
Mar. 29	claro	88030	41.21.27	41.22.14	31.29	41. 6.29
		86418	40.49.59	40.50.45		

Mar.

		Tangen tes cor- re ctæ ap- p. num- bra	Diff. a vertice apparentis limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
1701						
Mar. 30	clarissimo	86839 85235	40.58.14 40.26.34	40.59. 0 40.27.19	31.41	40.43. 9
Mar. 31	Sole pallidissimo	85633 84092	40.34.28 40. 3.40	40.35.13 40. 4.24	30.49	40.19.48
Apr. 5	ut antea	79980 78536	38.39.10 38. 8.41	38.39.52 38. 9.23	30.30	38.24.37
Apr. 14	clarissimo	70913 69542	35.20.30 34.48.56	35.21. 6 34.49.32	31.34	35. 5.19
Apr. 18	pallidissimo	67235 65954	33.54.54 33.24.23	33.55.29 33.24.57	30.32	33.40.13
Apr. 19	clarissimo	66311 65070	33.34.21 33. 3. 7	33.34.55 33. 3.40	31.15	33.19.17
Apr. 20	ut antea	65514 64224	33.13.50 32.42.37	33.14.23 32.43.10	31.13	32.58.46
Apr. 21	clarissimo	64662 63384	32.53.15 32.27. 6	32.53.48 32.22.38	31.10	32.38.13
Apr. 22	ut antea	63842 62570	32.33.18 32. 2. 3	32.33.51 32. 2.35	31.16	32.18.13
Apr. 24	clarissimo	62213 60965	31.53.13 31.22. 8	31.53.45 31.22.39	31. 6	31.38.12
Apr. 25	pallido	61410 60191	31.33.15 31. 2.39	31.33.46 31. 3. 9	31.37	31.18.57
Apr. 27	pallido	59870 58669	30.54.32 30.23.58	30.55. 2 30.24.27	30.35	30.39.44
Maj. 4	claro, celo nubilo	54943 53762	28.47. 8 28.15.49	28.47.37 28.16.17	31.20	28.31.57
Maj. 5	ut antea	54286 53122	28.29.45 27.58.41	28.30.13 27.59. 8	31. 5	28.14.40
Maj. 6	ut antea	53651 52487	28.12.54 27.41.37	28.13.21 27.42.14	31. 7	27.57.47

Hh a

Maj.

1701		Tangen tes cor- re ctæ a pe- numbra	Diff. a vertice apparent limborum			Diff. a vertice vera lim- borum			Diam. app. solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
Maj. 7	ut antea	53024 51872	27.56.	3		27.56.30 27.25.0			1.	4		27.40.58		
Maj. 8	clarissimo	52412 51263	27.39.36 27.8.28			27.40.3 27.8.54			31.	9		27.24.28		
Maj. 9	claro, czło nubilo	51811 50673	27.23.21 26.52.22			27.23.47 26.52.48			30.59			27.8.17		
Maj. 10	pallido	51224 50098	27.7.24 26.36.36			27.7.50 26.37.1			30.49			26.52.25		
Maj. 15	clarissimo	48510 47394	25.52.41 25.21.29			25.53.5 25.21.52			31.13			25.57.29		
Maj. 20	ut antea	46129 45043	24.45.48 24.14.53			24.46.12 24.5.15			30.56			24.30.43		
Maj. 22	pallido	45274 44187	24.21.32 23.50.21			24.21.54 23.50.43			31.11			24.6.18		
Maj. 23	fulgidissimo	44862 43789	24.9.43 23.38.53			24.10.5 23.39.15			30.50			23.54.40		
Maj. 24	ut supra	44485 43386	23.58.55 23.27.14			23.59.17 23.27.35			31.42			23.43.26		
Maj. 26	ut antea	43721 42648	23.36.55 23.5.50			23.37.17 23.6.11			31.6			23.21.47		
Maj. 27	pallidissimo	43358 42297	23.26.24 22.55.37			23.26.45 22.55.58			30.47			23.11.21		
Maj. 28	clarissimo	43024 41959	23.16.46 22.45.45			23.17.7 22.46.6			31.1			23.1.36		
Maj. 29	Sole claro, czło nubilo	42691 41639	23.7.5 22.36.23			23.7.26 22.36.44			30.42			22.52.5		
Maj. 30	Sole clarissimo	42384 41324	22.58.6 22.27.6			22.58.27 22.27.26			31.1			22.42.56		
Maj. 31	ut antea	42079 41024	22.49.15 22.18.19			22.49.36 22.18.39			30.57			22.34.7		

1701		Tangen tes corc dæ a pe numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim borum			Diam. app. Solis			Diff. a vertice vera cen tri		
			G	I	II	G	I	II	I	II		G	I	II
JUN. 1	Sole claro, celo nubilo	41795 40739	22.40.56	22.9.56		22.41.17	22.10.16		31.1			22.25.46		
JUN. 2	ut antea	41513 40467	22.32.41	22.1.55		22.33.1	22.2.15		30.46			22.17.38		
JUN. 4	clarissimo	41007 39967	22.17.49	21.47.7		22.18.9	21.47.27		30.42			22.2.48		
JUN. 5	ut antea	40781 39735	22.11.11	21.40.14		22.11.31	21.40.34		30.57			21.56.2		
JUN. 7	ut antea	40358 39313	21.58.41	21.27.41		21.59.1	21.28.1		31.0			21.43.31		
JUN. 8	ut antea	40168 39123	21.53.4	21.22.6		21.53.24	21.22.25		30.59			21.37.54		
JUN. 9	pallido	39970 38954	21.47.12	21.16.58		21.47.33	21.17.18		30.15			21.32.26		
JUN. 10	clarissimo	39820 38785	21.42.44	21.11.56		21.43.4	21.12.15		30.49			21.27.39		
JUN. 11	ut antea	39668 38637	21.38.14	21.7.30		21.38.34	21.7.49		30.45			21.23.12		
JUN. 12	ut antea	39542 38494	21.34.27	21.3.12		21.34.47	21.3.31		31.16			21.19.9		
JUN. 14	ut antea	39302 38269	21.27.23	20.56.29		21.27.42	20.56.48		30.55			21.12.15		
JUN. 17	claro	39059 38024	21.20.7	20.49.7		21.20.26	20.49.26		31.0			21.4.56		
JUN. 20	clarissimo	38943 37900	21.16.39	20.45.23		21.16.58	20.45.41		31.16			21.2.20		
JUN. 21	ut antea	38930 37892	21.16.16	20.45.10		21.16.35	20.45.30		31.5			21.1.2		
JUN. 22	ut antea	38936 37903	21.16.16	20.45.30		21.16.45	20.45.50		30.55			21.1.17		

JUN.

1701		Tangen- tes cor- rige a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	II	I	II
Jun. 23	ut antea	38950 37910	21.16.51 20.45.42	21.17.10 20.46.2	31.8	21.1.36
Jun. 24	ut antea	38982 37937	21.17.13 20.46.31	21.17.32 20.46.50	30.42	21.2.11
Jun. 27	ut antea	39143 38114	21.22.37 20.51.49	21.22.56 20.52.8	30.48	21.7.32
Jul. 2	claro	39714 38687	21.39.36 21.9.0	21.39.56 21.9.19	30.37	21.24.37
Jul. 7	clarissimo	40617 39572	22.6.19 21.35.24	22.6.39 21.35.44	30.55	21.51.11
Jul. 9	ut antea	41072 40031	22.19.44 21.49.0	22.20.4 21.49.21	30.42	22.4.42
Jul. 11	ut antea	41587 40544	22.34.51 22.4.11	22.35.12 22.4.31	30.41	22.19.51
Jul. 13	languidissimo	42150 41102	22.51.19 22.20.37	22.51.40 22.20.57	30.42	22.36.18
Jul. 14	clarissimo Sole	42450 41409	23.0.4 22.29.39	23.0.25 22.29.59	30.26	22.45.12
Jul. 15	ut antea	42765 41722	23.9.14 22.38.49	23.9.35 22.39.10	30.25	22.54.22
Jul. 16	ut antea	43106 42050	23.19.8 22.48.25	23.19.29 22.48.46	30.43	23.4.7
Jul. 17	claro	43442 42387	23.28.51 22.58.13	23.29.12 22.58.34	30.38	23.13.53
Jul. 19	ut antea	44172 43107	23.49.55 23.19.10	23.50.17 23.19.31	30.46	23.34.54
Jul. 20	claro	44561 43483	24.1.5 23.30.3	24.1.27 23.30.25	31.2	23.45.56
Jul. 21	pallido	44950 43880	24.12.14 23.41.31	24.12.36 23.41.53	30.43	23.57.14

Jul.

		Tangen tes cor- re- ctæ a pe- numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis		Diff. a vertice vera cen- tri	
			G	I II	G	I II	I	II	G	I II
1701										
Jul. 22	pallido	45356 44286	24.23.50 23.53.12		24.24.12 23.53.34		30.38		24. 8.53	
Jul. 23	claro	45780 44708	24.35.53 24. 5.19		24.36.15 24. 5.41		30.34		24.20.58	
Jul. 24	claro	46223 45135	24.48.28 24.17.31		24.48.51 24.17.53		30.58		24.33.23	
Jul. 25	ut antea	46678 45579	25. 1.20 24.30.10		25. 1.43 24.30.32		31.11		24.46. 7	
Jul. 27	clarissimo	47621 46519	25.27.52 24.56.50		25.28.15 24.57.13		31. 2		25.12.44	
Jul. 28	ut antea	48104 47001	25.41.22 25.10.27		25.41.46 25.10.50		30.56		25.26.18	
Jul. 30	ut antea	49135 48018	26. 9.58 25.38.58		26.10.22 25.39.22		31. 0		25.54.52	
Jul. 31	ut antea	49663 48543	26.24.37 25.53.37		26.25. 1 25.54. 1		31. 0		26. 9.31	
Aug. 1	claro	50201 49078	26.39.26 26. 8.27		26.39.51 26. 8.51		31. 0		26.24.21	
Aug. 2	ut antea	50759 49627	26.54.41 26.23.38		26.55. 7 26.24. 2		31. 5		26.39.34	
Aug. 3	ut antea	51328 50197	27.10.13 26.39.19		27.10.39 26.39.44		30.55		26.55.11	
Aug. 4	clarissimo	51904 50775	27.25.52 26.55.10		27.26.18 26.55.36		30.42		27.10.57	
Aug. 5	ut antea	52503 51360	27.42. 5 27.11.15		27.42.32 27.11.41		30.51		27.27. 6	
Aug. 6	pallido	53102 51970	27.58.10 27.27.39		27.58.37 27.28. 5		30.32		27.43.21	
Aug. 7	claro	53741 52585	28.15.15 27.44.16		28.15.42 27.44.43		30.59		28. 0.12	

Aug.

1701		Tangen tes corve dæ a pe- numbra	Dijf. a vertice apparens limborum			Dijf. a vertice vera lim borum			Diam. app. Solis		Dijf. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	G	I	II
Aug. 8	clarissimo	54365 53216	28.31.35			28.32.3			30.23		28.16.51		
Aug. 9	ut antea	55017 53852	28.49.6			28.49.35			30.55		28.34.7		
Aug. 10	ut antea	55698 54510	29.7.1			29.7.30			31.16		28.51.52		
Aug. 11	ut antea	56364 55176	29.24.27			29.24.55			31.10		29.9.20		
Aug. 12	Sole clarissimo	57056 55863	29.42.28			29.42.57			31.9		29.27.22		
Aug. 13	ut antea	57756 56552	30.0.32			30.1.1			31.12		29.45.25		
Aug. 14	ut antea. Ex schedis sup putationum	58482 57270	30.19.12			30.19.41			31.14		30.4.4		
Aug. 16	ut antea	59950 58721	30.56.34			30.57.4			31.17		30.41.25		
Aug. 17	ut antea	60711 59463	31.15.45			31.16.15			31.18		31.0.31		
Aug. 18	claro	61470 60239	31.34.45			31.35.16			30.55		31.19.48		
Aug. 20	ut antea	63052 61800	32.13.56			32.14.28			30.58		31.58.59		
Aug. 21	ut antea	63870 62601	32.33.59			32.34.32			32.10		32.18.27		
Aug. 23	ut antea	65531 64243	33.14.14			33.14.47			31.10		32.59.12		
Aug. 24	ut antea	66388 65086	33.34.45			33.35.23			31.13		33.19.46		
Aug. 26	ut antea	68141 66817	34.16.15			34.16.50			31.16		34.1.12		

Aug.

1701		Tangen tes cor re ctæ ap pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
Aug. 27	ut antea	69033 67708	34.37. 7 34. 6. 4	34.37.43 34. 6.39	31. 4	34.22.11
Aug. 28	clarissimo	69950 68610	34.58.27 34.27.14	34.59. 3 34.27.49	31.14	34.43.26
Aug. 29	ut antea	70884 69530	35.19.50 34.48.40	35.20.26 34.49.16	31.10	34. 4.51
Aug. 30	ut antea	71827 70458	35.41.19 35.10. 4	35.41.56 35.10.40	31.16	35.26.18
Sept. 1	clarissimo	73760 72370	36.24.45 35.53.36	36.25.22 35.54.13	31. 9	36. 9.47
Sept. 2	ut antea	74748 73347	36.46.39 36.15.32	36.47.18 36.16. 9	31. 9	36.31.43
Sept. 3	ut antea	75758 74333	37. 8.48 36.37.27	37. 9.27 36.38. 5	31.22	36.53.46
Sept. 4	ut antea	76764 75325	37.30.41 36.59.31	37.31.21 37. 0.10	31.11	37.15.45
Sept. 7	claro	79900 78433	38.37.33 38. 6.29	38.38.15 38. 7.10	31. 5	38.22.42
Sept. 8	clarissimo	80992 79491	39. 0.17 38.28.54	39. 1. 0 38.29.36	31.24	38.45.18
Sept. 9	clarissimo	82092 80578	39.23. 0 38.51.40	39.23.43 38.52.23	31.20	39. 8. 3
Sept. 11	pallido	84224 82728	40. 8.20 39.37.13	40. 9. 4 39.37.57	31. 7	39.53.30
Sept. 12	clarissimo	85476 83911	40.31.20 40. 0. 1	40.32. 5 40. 0.45	31.20	40.16.25
Sept. 14	ut antea	87817 86219	41.17.19 40.46. 3	41.18. 5 40.46.49	31.16	41.21.27
Sept. 15	ut antea	89025 87397	41.40.37 41. 9. 9	41.41.25 41. 9.55	31.30	41.25.40

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Maj.

1701		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparentis limborum		Diff. a vertice vera lim borum		Diam. app. Solis		Diff. a vertice vera cen tri	
			G	I II	G	I II	I II		G	I II
Sept. 16	Sole clarissimo	90233 88601	42. 3.39	41.32.29	42. 4.26	41.33.16	31.10		41.48.51	
Sept. 17	ut antea	91466 89808	42.26.52	41.55.35	41.27.39	41.56.22	31.17		42.12. 0	
Sept. 19	ut antea	93990 92289	43.13.32	42.42.13	43.14.21	42.43. 1	31.20		42.58.41	
Sept. 20	ut antea	95285 93555	43.37. 1	43. 5.34	43.37.51	43. 6.23	31.28		43.22. 7	
Sept. 21	claro, cælo nubilo	96597 94844	44. 0.30	43.29. 3	44. 1.21	43.29.53	31.28		43.45.37	
Sept. 22	Sole satis claro, cælo nubilo	97914 96141	44.23.46	43.52.21	44.24.27	43.53.24	31.13		44. 9. 0	
Sept. 23	ut antea	99244 97474	44.46.57	44.16. 2	44.47.49	44.16.53	30.56		44.32.21	
Sept. 24	clarissimo	100617 98798	45.10.33	44.39.13	45.11.25	44.40. 5	31.20		44.55.45	
Sept. 25	ut antea	102107 100155	45.35. 5	45. 2.40	45.35.37	45. 3.32	32. 5		45.19.34	
Sept. 26	languido	103418 101528	45.57.45	45.26. 4	45.58.37	45.26.55	31.41		45.42.46	
Sept. 28	clarissimo	106272 104345	46.44.30	46.13. 5	46.45.26	46.13.59	31.27		46.29.41	
Sept. 29	ut antea	107728 105772	47. 7.50	46.36.24	47. 8.46	46.37.19	31.27		46.53. 2	
Oct. 1	claro	110725 108717	47.54.49	47.23.30	47.55.47	47.24.27	31.20		47.40. 7	
Oct. 13	pallido	1130356 1127922	52.30.25	51.59. 4	52.31.34	52. 0.11	31.23		52.15.52	
Oct. 17	claro	1137639 1135026	54. 0. 1	53.28.35	54. 1.13	53.29.46	31.27		53.45.29	

Mar.

1701		Tangen- tes cor- re æ a p numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
08. 18	clarissimo	139515 136848	54.22. 6 53.50.35	54.23.19 53.51.47	31.32	54. 7.33
08. 20	ut antea	143293 140524	55. 5.24 54.33.44	55. 6.39 54.34.58	31.41	54.50.48
08. 21	ut antea	145212 142384	55.26.49 54.55. 7	55.28. 6 54.56.22	31.44	55.12.14
08. 22	pallido	147127 144286	55.47.48 55.16.31	55.49. 6 55.17.47	31.19	55.33.26
08. 23	clarissimo	149108 146190	56. 9. 7 55.37.35	56.10.26 55.38.53	31.33	55.54.39
08. 24	pallido	151121 148156	56.30.23 55.58.56	56.31.44 56. 0.15	31.29	56.15.59
08. 25	clarissimo	153131 150099	56.51.14 56.19.39	56.52.36 56.20.59	31.37	56.36.47
08. 27	clarissimo	157229 154066	57.32.35 57. 0.48	57.33.59 57. 2.10	31.49	57.18. 4
08. 28	ut antea	159315 156077	57.53. 2 57.21. 7	57.53.28 57.21.30	31.58	57.37.29
08. 30	raptim inter nubes	163450 160167	58.32.29 58. 1.17	58.33.57 58. 2.43	31.14	58.18.20
08. 31	Sole pallido	165576 162208	58.52.12 58.20.47	58.53.41 58.22.14	31.27	58.37.57
Nov. 1	Sole claro	167718 164260	59.11.42 58.40. 2	59.13.12 58.41.31	31.41	58.57.21
Nov. 2	ut antea	169862 166338	59.30.52 58.59.17	59.32.24 59. 0.47	31.37	59.16.35
Nov. 3	ut antea	171999 168418	59.49.35 59.17.59	59.51. 8 59.19.30	31.38	59.35.19
Nov. 4	ut antea	174189 170527	60. 8.25 59.36.43	60.10. 9 59.38.15	31.54	59.54.12

1701		Tangen tes cor- re- ctæ ap- p. num- bra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
Nov. 9	claro	185186	61.37.52	61.39.33	31.37	61.23.44
		181186	61. 6.17	61. 7.56		
Nov. 12	pallido	191821	62.27.50	62.29.34	31.41	62.13.43
		187568	61.56.10	61.57.53		
Nov. 16	clarissimo	200764	63.30.27	63.32.16	31.44	63.16.24
		196087	62.58.46	63. 0.32		
Nov. 20	clarissimo	209327	64.27.55	64.29.49	31.53	64.13.52
		204439	63.56. 3	63.57.56		
Nov. 24	ut antea	217633	65.19.18	65.21.16	31.51	65. 5.20
		212429	64.47.29	64.49.25		
Nov. 25	ut antea	219653	65.31.49	65.33.49	32.27	65.17.35
		214353	64.59.25	65. 1.22		
Nov. 27	clarissimo	223546	65.53.58	65.56. 0	31.57	65.40. 1
		218095	65.22. 4	65.24. 3		
Nov. 29	claro	227309	66.15.14	66.17.19	32. 3	66. 1.17
		221689	65.43.15	65.45.16		
Dec. 1	clarissimo	230930	66.35. 9	66.37.16	32.28	66.21. 2
		225089	66. 2.45	66. 4.48		
Dec. 7	ut antea	239994	67.22.47	67.24.59	32. 0	67. 8.59
		233854	66.50.51	66.52.59		
Dec. 8	claro	241269	67.29.14	67.31.26	32. 1	67.15.25
		235067	66.57.16	66.59.25		
Dec. 10	claro, exlo nubilo	243603	67.40.54	67.43. 8	32. 1	67.27. 7
		237301	67. 8.57	67.11. 7		
Dec. 13	subpallido	246478	67.55. 1	67.57.17	32. 9	67.41.12
		240025	67.22.57	67.25. 8		
1702						
Jan. 1	clarissimo Sole	244632	67.45.59	67.48.13	32. 6	67.32.10
		238268	67.13.56	67.16. 7		

Jan.

		Tangen tes cor de a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
1702						
Jan. 2	ut supra	243599 237282	67.40.53 67. 8.52	67.43. 7 67.11. 2	32. 5	67.27. 4
Jan. 4	claro, cælo núbilo	241269 235079	67.29.14 66.57.21	67.11.26 66.59.30	31.56	67.15.28
Jan. 8	clarissimo	235747 229740	67. 0.51 66.28.40	67. 3. 0 66.30.46	32.14	66.46.53
Jan. 10	ut antea	222496 226690	66.43.36 66.11.47	66.45.43 66.13.51	31.52	66.29.47
Jan. 22	Sole claro, cælo núbilo	209257 204323	64.27.28 63.55.19	64.29.22 63.57.10	32.12	64.13.16
Jan. 23	clarissimo	207062 202259	64.13.10 63.41.30	64.15.11 63.43.21	31.50	63.59.16
Jan. 24	ut antea	204896 200168	63.59. 6 63.27.15	64. 0.58 63.29. 3	31.53	63.45. 0
Jan. 28	Sole clarissimo	196027 191652	62.58.20 62.26.44	63. 0. 6 62.28.28	31.38	62.44.17
Jan. 30	clarissimo	191614 187365	62.26.26 61.54.37	62.28.10 61.56.20	31.50	62.12.15
Jan. 31	clarissimo	189410 185199	62.10. 5 61.37.58	62.11.48 61.39.39	32. 9	61.55.44
Feb. 1	ut antea	187156 183050	61.53. 2 61.21. 8	61.54.44 61.22.48	31.56	61.38.46
Feb. 4	ut antea	180491 176614	61. 0.42 60.28.52	61. 2.20 60.30.28	31.52	60.46.24
Feb. 5	claro	178253 174454	60.42.27 60.10.42	60.44. 4 60.12.17	31.47	60.28.11
Feb. 6	clarissimo	176070 172329	60.24.19 59.52.27	60.25.55 59.54. 1	31.54	60. 9.58
Feb. 7	ut antea	173852 170192	60. 5.33 59.33.46	60. 7. 7 59.35.18	31.49	59.51.13

Feb.

1702		Tangen- tes corre da a pe- numbra	Diff.	Diff.	Diam.	Diff.
			a vertice apparenti limborum	a vertice vera lim- borum	app. Sollis	a vertice vera cen- tri
			G 1 11	G 1 11	1 11	G 1 11
Feb. 8	ut antea	171681 168090	59.46.49 59.15. 3	59.48.22 59.16.34	31.48	59.32.28
Feb. 9	clarissimo	169523 165991	59.27.50 58.56. 1	59.29.22 58.57.31	31.51	59.13.27
Feb. 10	ut antea	167362 163909	59. 8.29 58.36.46	59.10. 0 58.38.14	31.46	58.54. 7
Feb. 11	ut antea	165216 161836	58.48.53 58.17.15	58.50.22 58.18.42	31.40	58.34.32
Feb. 12	ut antea	163088 159772	58.29. 5 57.57.29	58.30.33 57.58.55	31.38	58.14.44
Feb. 14	ut antea	158911 155680	57.49. 6 57.17. 8	57.50.31 57.18.31	32. 0	57.34.31
Feb. 26	clarissimo	135264 132666	53.31.29 52.59.32	53.32.41 53. 0.44	31.57	53.16.42
Feb. 27	ut antea	137422 130879	53. 8.54 52.37. 5	53.10. 4 52.38.14	31.50	52.54. 9
Mar. 1	ut antea	129822 127374	52.23.36 51.51.54	52.24.44 51.53. 1	31.43	52. 8.52
Mar. 3	claro	126297 123949	51.37.42 51. 6.15	51.38.45 51. 7.19	31.29	51.23. 4
Mar. 9	pallido	116274 114209	49.18.11 48.47.42	49.19.22 48.48.42	30.30	49. 3.57
Mar. 10	claro	114712 112609	48.55.11 48.23.38	48.56.10 48.24.36	31.34	48.40.23
Mar. 11	claro	113139 111074	48.31.39 48. 0.12	48.32.38 48. 1.10	31.28	48.16.54
Mar. 12	clarissimo	111602 109558	48. 8.18 47.36.41	48. 9.16 47.37.38	31.38	47.53.27
Mar. 14	ut antea	108563 106576	47.21. 4 46.49.29	47.22. 1 46.50.20	31.41	47. 6.10

Mar.

		Tangen tes cor- rige a pe- numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis	Diff. a vertice vera cen- tri	
			G	I II	G	I II		G	I II
1702									
Mar. 15	ut antea	107079 105121	46.57.29 46.25.46		46.58.25 46.26.43		31.42	46.42.34	
Mar. 16	ut antea	105618 103683	46.33.53 46. 2. 9		46.34.48 46. 3. 3		31.45	46.18.55	
Mar. 19	cælo nubilo	101333 99488	45.22.46 44.51.10		45.23.39 44.52. 2		31.37	45. 7.50	
Mar. 21	cælo sereno	98578 96791	44.35.23 44. 3.55		44.36.14 44. 4.45		31.29	44.20.30	
Mar. 22	clarissimo	97231 95155	44.11.44 43.40. 4		44.12.55 43.40.54		31.41	43.56.45	
Mar. 23	pallido	95894 94174	43.47.57 43.16.53		43.48.48 43.17.43		31. 5	43.33.16	
Mar. 24	clarissimo	94586 92865	43.24.23 42.52.52		43.25.13 42.53.41		31.32	43. 9.27	
Mar. 26	ut antea	92022 90250	42.37.16 42. 3.59		42.38. 4 42. 4.46		33.18		
Mar. 29	ut antea	88324 86706	41.27. 8 40.55.38		41.27.55 40.56.24		31.31	41.12.10	
Mar. 30	ut antea	87133 85527	41. 4. 0 40.32.22		41. 4.46 40.33. 7		31.39	40.48.56	
Mar. 31	ut antea	85950 84362	40.40.45 40. 9. 5		40.41.30 40. 9.49		31.41	40.25.40	
Apr. 1	claro	84772 83232	40.17.19 39.46.17		40.18. 4 39.47. 1		31. 3	40. 2.33	
Apr. 2	ut antea	83621 82087	39.54.10 39.22.54		39.54.54 39.23.57		31.17	39.39.16	
Apr. 3	ut antea	82484 80974	39.31. 1 38.59.55		39.31.45 39. 0.38		31. 7	39.16.11	
Apr. 4	clarissimo	81376 79882	39. 8.15 38.37. 6		39. 8.58 38.37.48		31.10	38.53.23	

Apr.

1702		Tangen tes cor- re a pe- numbra	Dist. a vertice apparent limborum			Dist. a vertice vera lim- borum			Diam. app. Solis			Dist. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
Apr. 5	pallido	80286 78802	38.45.35			38.46.18			31.17			38.30.40		
			38.14.20			38.15.1								
Apr. 7	claro	78132 76690	38. 0. 4			38. 0.45			31. 1			37.45.15		
			37.29. 5			37.29.44								
Apr. 10	clarissimo	75050 73631	36.53.17			36.53.56			31.26			36.38.13		
			36.21.52			36.22.30								
Apr. 12	pallido	73068 71672	36. 9.17			36. 9.54			31.30			35.54. 9		
			35.37.48			35.38.24								
Apr. 14	clarissimo	71133 69773	35.25.31			35.26. 7			31.15			35.10.30		
			34.54.17			34.54.52								
Apr. 16	ut antea	69271 67933	34.42.39			34.43.15			31.18			34.27.36		
			34.11.22			34.11.57								
Apr. 20	ut antea	65731 64430	33.19. 3			33.19.37			31.27			33. 3.54		
			32.47.37			32.48.10								
Apr. 21	pallido	64864 63601	32.58. 9			32.58.41			30.44			32.43.19		
			32.27.25			32.27.57								
Apr. 22	claro	64033 62765	32.37.57			32.38.30			31. 6			32.22.56		
			2. 6.52			32. 7.24								
Maj. 2	nubilo	56454 55266	29.26.47			29.27.15			31. 8			29.11.41		
			28.55.39			28.56. 7								
Maj. 9	pallido	51950 50814	27.27. 6			27.27.32			30.53			27.12. 6		
			26.56.13			26.56.39								
Maj. 11	claro	50794 49666	26.55.41			26.56. 7			31. 0			26.40.37		
			26.24.42			26.25. 7								
Maj. 12	clarissimo	50237 49111	26.40.25			26.40.50			31. 4			26.25.18		
			26. 9.22			26. 9.46								
Maj. 18	ut antea	47154 46059	25.14.45			25.15. 8			30.55			24.59.41		
			24.43.50			24.44.13								
Maj. 19	Sole clarissimo	46692 45600	25. 1.43			25. 2. 6			30.57			24.46.38		
			24.30.46			24.31. 9								

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		Tangen tes cor- re a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I II	G	I II	G I II
1702						
Maj. 23	ut antea	44963 43886	24.12.37 23.41.41	24.12.59 23.42. 3	30.56	23.57.31
Maj. 25	claro	44180 43103	23.50. 9 23.19. 3	23.50.31 23.19.24	31. 7	23.34.58
Maj. 26	ut antea	43802 42737	23.39.15 23. 8.26	23.39.37 23. 8.47	30.50	23.24.12
Jun. 1	clarissimo	41849 40808	22.42.52 22.11.58	22.42.53 22.12.18	30.55	22.27.56
Jun. 10	ut antea	39859 38818	21.43.55 21.12.55	21.44.15 21.13.14	31. 1	21.28.45
Jun. 12	ut antea	39567 38530	21.35.14 21. 4.18	21.35.34 21. 4.57	30.57	21.20. 5
Jun. 21	claro	38928 37883	21.16.12 20.44.53	21.16.31 20.45.13	31.18	21. 0.52
Jun. 22	clarissimo	38935 37895	21.16.25 20.45.15	21.16.44 20.45.34	31.10	21. 1. 9
Jun. 23	ut antea	38938 37899	21.16.30 20.45.22	21.16.49 20.45.42	31. 7	21. 1.15
Jun. 25	ut antea	39007 37974	21.18.34 20.47.38	21.18.53 20.47.57	30.56	21. 3.25
Jun. 26	ut antea	39061 38020	21.20.11 20.49. 0	21.20.30 20.49.19	31.11	21. 4.54
Jun. 27	claro	39131 38093	21.22.16 20.51.12	21.22.35 20.51.31	31. 4	21. 7. 3
Jul. 1	claro	39541 38501	21.34.27 21. 3.25	21.34.47 21. 3.44	31. 3	21.19.15
Jul. 5	ut antea	39994 38954	21.47.55 21.16.58	21.48.16 21.17.17	30.59	21.32.47
Jul. 10	clarissimo	41258 40206	22.25.12 21.54.11	22.25.32 21.54.31	31. 1	22.10. 2

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		Tangen- tes corre- ctæ a pe- numbra	Diff. a vertice apparent limborum			Diff. a vertice vera lim- borum			Diam. app. Solis	Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I II	G	I	II
1702												
Jul. 11	ut antea	41524 40473	22.33.	0		22.33.21			30.55	22.17.54		
Jul. 13	ut antea	42079 41023	22.49.15			22.49.36			30.58	22.34. 7		
Jul. 14	ut antea	42383 41321	22.58. 7			22.58.28			31. 3	22.42.57		
Jul. 18	ut antea	43705 42650	23.36.27			23.36.49			30.35	23.21.32		
Jul. 22	ut antea	45261 44172	24.21. 7			24.21.29			31.12	24. 5.53		
Jul. 26	ut antea	47024 45922	25.11. 0			25.11.24			31. 4	24.55.52		
Jul. 27	ut antea	47498 46398	25.24.25			25.24.48			31. 0	25. 9.18		
Jul. 29	ut antea	48491 47380	25.52. 9			25.52.33			31. 5	25.37. 1		
Jul. 30	ut antea	48999 47891	26. 6.16			26. 6.40			30.51	25.51.15		
Aug. 1	ut antea	50064 48944	26.35.40			26.36. 5			30.56	26.20.37		
Aug. 3	Sole clarissimo	51172 50050	27. 5.58			27. 6.24			30.42	26.51. 3		
Aug. 5	ut antea	52354 51206	27.38. 2			27.38.29			31. 4	27.22.57		
Aug. 6	ut antea	52955 51813	27.54.13			27.54.40			30.50	27.39.15		
Aug. 8	clarissimo, specie tremula	54210 53055	28.27.44			28.28.11			30.50	28.12.46		
Aug. 10	Sole claro cælo nubilo	55526 54329	29. 2.30			29. 2.58			31.36	28.47.10		

Aug.

1702		Tangen tes corvæ Dæ ap- penumbra	Diffr. a vertice apparent vera lim- borum	Diffr. a vertice vera lim- borum	Diam. app. Sollis	Diffr. a vertice vera cen- tri
			G I II	G I II	I II	G I II
Aug. 11	ut antea	56234 55002	29.21.3 28.48.43	29.21.31 28.49.11	32.20	29. 5.21
Aug. 12	pallido	56884 55687	29.38.0 29. 6.44	29.38.29 29. 7.12	31.17	29.22.51
Aug. 13	pallido	57568 56386	29.55.42 29.25.2	29.56.11 29.25.30	30.41	29.40.51
Aug. 14	claro	58277 57088	30.13.57 29.43.18	30.14.26 29.43.47	30.39	29.59. 7
Aug. 15	clarissimo	59018 57806	30.32.54 30. 1.51	30.33.24 30. 2.20	31. 4	30.17.52
Aug. 16	claro	59752 58539	30.51.33 30.20.40	30.52. 3 30.21. 9	30.54	30.36.36
Aug. 17	claro	60516 59283	31.10.50 30.39.38	31.11.20 30.40. 8	31.12	30.55.44
Aug. 22	ut antea	64495 63221	32.49.12 32.18. 6	32.49.45 32.18.38	31. 7	32.34.12
Aug. 23	ut antea	65327 64050	33. 9.19 32.38.22	33. 9.52 32.38.55	30.57	32.54.24
Aug. 24	ut antea	66177 64877	33.29.43 32.58.28	33.30.16 32.59. 1	31.15	33.14.39
Aug. 25	Sole pallido	67038 65741	33.50.14 33.19.17	33.50.49 33.19.50	30.59	33.35.20
Aug. 27	ut antea	68818 67501	34.32. 6 34. 1.11	34.32.42 34. 1.46	30.56	34.17.14
Aug. 29	pallido	70653 69297	35.14.37 34.43.15	35.15.13 34.43.51	31.22	34.59.32
Aug. 30	pallido	71592 70226	35.35.59 35. 4.44	35.36.35 35. 5.19	31.16	35.20.57
Aug. 31	claro	72555 71167	35.57.46 35.26.18	35.58.23 35.26.53	31.30	35.42.38

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Aug.

1702		Tangen tes cor- de a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera (im- berum	Diam. app. Solis	Diff. a vertice vera cen- t.
		G	I	II	I	II
Sept. 1	claro	73528 74125	36.19.35 35.48.4	36.20.12 35.48.41	31.31	36.4.27
Sept. 3	fulgidissimo	75498 74087	37.3.8 36.32.1	37.3.47 36.32.79	31.8	36.48.13
Sept. 7	ut antea	79649 78177	38.32.13 38.1.3	38.32.55 38.1.44	31.11	38.17.19
Sept. 8	pallido	80726 79244	38.54.45 38.23.41	38.55.28 38.24.22	31.6	38.39.55
Sept. 9	claro	81815 80309	39.17.18 38.46.4	39.18.1 38.46.47	31.14	39.2.24
Sept. 10	claro	82935 81407	39.40.15 39.8.52	39.40.59 39.9.36	31.23	39.25.12
Sept. 13	Sole clarissimo	86359 84784	40.48.49 40.17.34	40.49.55 40.18.15	31.17	40.33.57
Sept. 14	ut antea	87531 85930	41.11.46 40.40.21	41.12.32 40.41.6	31.26	40.56.49
Sept. 17	claro	91164 89514	42.21.12 41.49.59	42.22.0 41.50.47	31.23	42.6.24
Sept. 18	ut antea	92406 90747	42.44.23 42.13.22	42.45.12 42.14.10	31.2	42.29.41
Sept. 20	clarissimo	94970 93254	43.31.21 43.0.2	43.32.11 43.0.52	31.19	43.16.32
Sept. 23	claro	98950 97149	44.41.52 44.10.17	44.42.44 44.11.8	31.36	44.26.56
Sept. 24	ut antea	100300 98471	45.5.9 44.33.31	45.6.1 44.34.23	31.38	44.50.12
Sept. 25	ut antea	101683 99823	45.28.41 44.56.57	45.29.34 44.57.49	31.45	45.13.42
Sept. 26	ut antea	103076 101209	45.52.5 45.20.39	45.52.59 45.21.31	31.28	45.37.13

Sept.

		Tangen- tes cor- re ctæ a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
1702						
Sept. 27	ut antea	104507 102594	46.15.46 45.44.1	46.16.40 45.44.54	31.46	46.0.4
Sept. 28	ut antea	105923 104004	46.38.51 46.7.28	46.39.46 46.8.22	31.24	46.24.4
Sept. 29	ut antea	107399 105447	47.2.35 46.31.8	47.3.31 46.32.3	31.28	46.47.47
Sept. 30	ut antea	108903 106889	47.26.25 46.54.25	47.27.22 46.55.21	32.1	47.11.21
Oct. 1	pallido	110372 108355	47.49.21 47.17.47	47.50.19 47.18.44	31.35	47.34.31
Oct. 2	claro	111882 109871	48.12.35 47.41.34	48.13.33 47.42.21	31.5	47.58.1
Oct. 3	claro	113424 111356	48.35.56 48.4.32	48.36.55 48.5.30	31.25	48.21.13
Oct. 5	claro	116556 114426	49.22.19 48.50.56	49.23.20 48.51.56	31.24	49.7.38
Oct. 6	pallido	118161 115978	49.45.31 49.13.52	49.46.33 49.14.52	31.41	49.30.42
Oct. 9	claro	123091 120789	50.54.33 50.22.43	50.55.39 50.23.47	31.52	50.39.43
Oct. 10	pallido	124773 122459	51.17.22 50.45.53	51.18.27 50.46.57	31.30	51.2.42
Oct. 22	claro	146691 143838	55.43.3 55.11.31	55.44.19 55.12.46	31.33	55.28.33
Oct. 24	claro	150652 147692	56.25.28 55.53.55	56.26.48 55.55.14	31.34	56.11.1
Oct. 26	pallido	154693 151607	57.7.12 56.35.28	57.8.34 56.36.49	31.45	56.52.42
Oct. 30	clarissimo	162990 159691	58.28.20 57.56.41	58.29.38 57.58.7	31.31	58.13.53

Oct.

1702		Tangen tes corre ctæ a pe numbra	Dist. a vertice apparens limborum			Dist. a vertice vera lim borum			Diam. app. Solis		Dist. a vertice vera cen tri		
			G	I	II	G	I	II	I	II	G	I	II
Oct. 31	ut antea	165076	58.47.36			58.49.5			31.17		58.33.25		
		161740	58.16.21			58.17.48							
Nov. 5	ut antea	175881	60.22.44			60.24.20			31.50		60.8.25		
		172157	59.50.57			59.52.30							
Nov. 16	Sole clarissimo	200143	63.27.5			63.28.53			31.44		63.13.1		
		195612	62.55.23			62.57.9							
Nov. 17	ut antea. Hæc observatio descripta est a schedis suppu tationum diurnalium, nam in adverf. meis desideratur	202340	63.42.2			63.43.52			32.54		63.27.55		
		197706	63.10.11			63.11.58							
Nov. 19	ut antea	206686	64.10.52			64.12.44			32.1		63.56.44		
		201876	63.38.54			63.40.43							
Nov. 22	ut antea	213077	64.51.31			64.53.30			32.7		64.37.26		
		208017	64.19.30			64.21.23							
Nov. 23	ut antea	215123	65.4.7			65.6.4			31.59		64.50.4		
		209997	64.32.11			64.34.5							
Nov. 24	ut antea	217151	65.16.25			65.18.24			31.47		65.2.31		
		211979	64.44.41			64.46.37							
Dec. 18	Sole claro	249300	68.8.35			68.10.52			32.9		67.54.48		
		242719	67.36.30			67.38.43							
Dec. 19	ut antea	249702	68.10.30			68.12.49			32.34		67.56.32		
		243027	67.38.1			67.40.15							
Dec. 25	clarissimo	249493	68.9.30			68.11.47			32.21		67.55.42		
		242895	67.37.22			67.39.36							
Dec. 26	pallido	249107	68.7.40			68.9.57			32.13		67.53.50		
		242522	67.35.31			67.37.44							
Dec. 27	clarissimo	248635	68.5.25			68.7.42			32.8		67.51.58		
		242087	67.33.22			67.35.34							
Dec. 28	ut antea	248085	68.2.46			68.5.2			32.7		67.48.59		
		241559	67.30.42			67.32.55							

Dec.

		Tangen tes cor re ^{ct} æ a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G	I	II	I	II
1702						
Dec. 29	ut antea	247425 240903	67.59.33 67.27.23	68. 1.51 67.29.33	32.16	67.45.43
Dec. 31	pallido	245837 239385	67.51.53 67.19.41	67.54. 8 67.21.52	32.16	67.38. 0
1703						
Jan. 2	Luna hac nocte observata est in meridiana, hora 11.44 3 post mer. Tangentes in correctæ 42122, 41030					
Jan. 8	Sole clarissimo	236095 230100	67. 2.40 66.30.39	67. 4.49 66.32.45	32. 4	66.48.47
Jan. 9	Sole claro	234550 228604	66.54.33 66.22.25	66.56.42 66.24.30	32.12	66.40.36
Jan. 10	pallido	232929 227068	66.45.56 66.13.53	66.48. 4 66.15.57	32. 7	66.32. 1
Jan. 11	claro	231243 225444	66.36.51 66. 4.46	66.38.58 66. 6.50	32. 8	66.22.54
Jan. 29	pallido	194377 190021	62.46.33 62.14.39	62.48.18 62.16.22	31.56	62.32.20
Jan. 30	claro	192150 187879	62.30.23 61.58.32	62.32. 7 62. 0.10	31.57	62.16. 8
Jan. 31	claro	189935 185705	62.14. 0 61.47.53	62.15.43 61.43.55	32. 8	61.59.39
Feb. 1	claro	187699 183574	61.57.10 61.25.16	61.58.52 61.26.56	31.56	61.42.54
Feb. 2	claro	185468 181423	61.40. 5 61. 8.12	61.41.44 61. 9.51	31.53	61.25.48
Feb. 3	claro	183232 179261	61.22.34 60.50.43	61.24.14 60.52.21	31.53	61. 8.18

Feb.

1703		Tangen tes cor- re- de a pe- numbra	Diff.	Diff.	Diam.	Diff.
			a vertice apparens limborum	a vertice vera lim- borum	app. Solis	a vertice vera cen- tri
			G I II	G I II	I II	G I II
Feb. 4	Sole pallido	181031 177127	61. 5. 3 60.33. 9	61. 6. 41 60.34. 45	31.56	60.50.43
Feb. 13	Sole obnubilato specie tre- mula	161516 158231	58.14.13 57.42.28	58.15.40 57.43.53	31.47	57.59.47
Feb. 17	Sole claro specie tremula	153203 150129	56.51.57 56.19.57	56.53.18 56.21.17	32. 1	56.37.18
Feb. 18	ut antea	151164 148175	56.30.43 55.59. 8	56.32. 4 56. 0.27	31.37	56.16.17
Feb. 19	ut antea	149170 146200	56. 9.47 55.37.41	56.11. 7 55.39. 0	32. 7	55.55. 4
Feb. 21	Sole claro	145194 142373	55.26.37 54.54.59	55.27.54 54.56.14	31.40	55.12. 4
Mar. 3	Sole claro	126738 124355	51.43.32 51.11.44	51.44.38 51.12.49	31.49	51.28.44
Mar. 4	ut antea	125014 122671	51.20.36 50.48.49	51.21.41 50.49.54	31.47	51. 5.48
Mar. 6	pallido	121627 119367	50.34.24 50. 2.43	50.35.28 50. 3.46	31.42	50.19.37
Mar. 9	pallido	116669 114549	49.23.58 48.52.46	49.24.59 48.53.46	31.13	49. 9.23
Mar. 10	claro	115109 112996	49. 1. 4 48.29.30	49. 2. 4 48.30.29	31.35	48.46.16
Mar. 13	claro	110468 108421	47.50.51 47.18.50	47.51.49 47.19.47	32. 2	47.35.48
Mar. 17	Sole languido	104513 102613	46.15.51 45.44.20	46.16.46 45.45.13	31.33	46. 1. 0
Mar. 18	claro	103105 101198	45.52.33 45.20.28	45.53.27 45.21.21	32. 6	45.37.24
Mar. 19	clarissimo	101679 99817	45.28.37 44.56.51	45.29.29 44.57.43	31.46	45.13.36

Mar.

		Tangen tes cor- re a pe numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
1703														
Mar. 21	ut antea	98912 97099	44.41.12	44. 9.24	44.42. 4	44.10.15			31.49			44.26.10		
Mar. 22	ut antea	97568 95781	44.17.42	43.45.57	44.18.33	43.46.47			31.46			44. 2.39		
Mar. 23	ut antea	96231 94410	43.53.50	43.22. 6	43.54.41	43.22.55			31.46			43.38.48		
Mar. 24	ut antea	94916 93166	43.30.22	42.58.26	43.31.12	42.59.15			31.57			43.15.13		
Mar. 28	ut antea, e schedis diu- nalium supputationum	89841 88191	41.56.12	41.24.33	41.57. 0	41.25.19			31.41			41.47. 9		
Mar. 29	clarissimo	88624 86993	41.32.55	41. 1.15	41.33.42	41. 2. 1			31.41			41.17.51		
Mar. 30	ut antea	87423 85802	41. 9.39	40.37.49	41.10.25	40.38.34			31.51			40.54.30		
Apr. 5	ut antea	80563 79063	38.51.21	38.19.51	38.52. 4	38.20.32			31.32			38.36.18		
Apr. 7	ut antea	78416 76940	38. 6. 8	37.34.30	38. 6.49	37.35.10			31.39			37.51. 0		
Apr. 9	ut antea, e schedis sup- putationum	76327 74883	37.21.12	36.49.37	37.21.52	36.50.16			31.36			37. 6. 4		
Apr. 11	ut antea	74302 72882	36.36.47	36. 5. 7	36.37.25	36. 5.44			31.41			36.21.35		
Apr. 12	Sole claro	73319 71915	36.14.55	35.43.19	36.15.32	35.43.55			31.37			35.59.44		
Apr. 13	claro	72342 70945	35.52.57	35.21.14	35.53.34	35.21.49			31.45			35.37.41		
Apr. 16	ut antea	69496 68154	34.47.49	34.16.33	34.48.25	34.17. 8			31.17			34.32.47		
Apr. 17	ut antea	68593 67258	34.26.50	33.55.27	34.27.25	33.56. 2			31.23			34.11.44		

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Apr.

1703		Tangen tes cor- dæ a pe- numbra	Diff. a vertice apparent limborum			Diff. a vertice vera lim- borum			Diam. app. Solis		Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	G	I	II
Apr. 18	ut antea	67700 66365	34. 5.53	33.34.13		34. 6.28	33.34.47		31.41		33.50.37		
Apr. 19	ut antea	66801 65493	33.44.36	33.13.19		33.45.10	33.13.52		31.18		33.29.51		
Apr. 20	ut antea	65930 64632	33.23.49	32.52.31		33.24.22	33.53. 4		31.18		33. 8.43		
Apr. 22	pallido	64229 62969	32.42.44	32.11.54		32.42.17	32.12.26		30.51		32.27.52		
Apr. 23	claro, cælo nubilo	63410 62156	32.22.44	31.51.48		32.23.16	31.52.20		30.56		32. 7.48		
Apr. 24	nubilo	62584 61356	32. 2.25	31.31.54		32. 2.57	31.32.25		30.51		31.47.40		
Apr. 25	nubilo	61803 60581	31.43. 3	31.12.29		31.43.34	31.12.59		30.55		31.28.17		
Maj. 1	Sole claro	57315 56121	29.49. 9	29.18. 5		29.49.38	29.18.33		31. 5		29.34. 5		
Maj. 2	pallidissimo	56605 55445	29.30.43	29. 0.22		29.31.12	29. 0.50		30.22		29.16. 1		
Maj. 3	claro	55922 54757	29.12.54	28.42.14		29.13.22	28.42.42		30.40		28.58. 2		
Maj. 5	claro	54600 53440	28.38. 5	28. 7.12		28.38.33	28. 7.59		30.54		28.23. 6		
Maj. 10	claro	51514 50375	27.15.18	26.44.12		27.15.44	26.44.37		31. 7		27. 0.21		
Maj. 18	languido. Per hosce dies cum effet Bononia Maral- dus mecum interdum, vel cum Stancario, observatio- nes habebat	47263 46169	25.17.49	24.46.57		25.18.11	24.47.20		30.51		25. 2.46		

Maj.

1703		Tangen- tes cor- re æ æpe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
Maj. 21	claro	45902 44813	24.39.22 24. 8.19	24.39.45 24. 8.41	31. 4	24.24.13
Maj. 29	claro	42844 41788	23.11.35 22.40.38	23.11.56 22.40.59	30.57	22.56.28
Maj. 30	claro	42542 41458	23. 2.45 22.31. 5	23. 3. 6 22.31.26	31.40	22.47.16
Jun. 1	nubilo	41929 40878	22.44.53 22.14. 2	22.45.14 22.14.23	30.52	22.29.48
Jun. 2	subnubilo	41640 40595	22.36.25 22. 5.41	22.36.46 22. 6. 1	30.45	22.22.24
Jun. 15	claro	39242 38204	21.25.34 20.54.32	21.25.53 20.54.51	31. 2	21.10.22
Jun. 22	clarissimo	38930 37894	21.16.16 20.45.13	21.16.35 20.45.32	31. 3	21. 2. 4
Jun. 23	cælo subnubilo	38936 37901	21.16.26 20.45.24	21.16.45 20.45.43	31. 2	21. 1.14
Jun. 26	claro	39052 38012	21.19.55 20.48.46	21.20.14 20.49. 5	31. 9	21. 4.40
Jun. 27	Sole claro, cælo nubilo	39117 38079	21.21.51 20.50.47	21.22.10 20.51. 6	31. 4	21. 6.38
Jun. 28	Sole languido	39187 38155	21.23.55 20.53. 4	21.24.14 20.53.23	30.51	21. 8.49
Jul. 4	Sole claro	39950 38912	21.46.36 21.15.44	21.46.57 21.16. 3	30.54	21.31.30
Jul. 10	claro	41192 40152	22.23.16 21.52.35	22.23.36 21.52.56	30.40	22. 8.16
Jul. 16	claro	42939 41883	23.14.18 22.43.32	23.14.40 22.43.53	30.47	22.59.17
Jul. 17	ut antea	43278 42220	23.24. 8 22.53.22	23.24.29 22.53.43	30.46	23. 9. 6

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Jul.

1703		Tangen- tes cor- re- ctæ a pe- numbra	Diff. a vertice apparentis limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	II	I	II
Jul. 20	ut antea	44364 43298	23.55.26 23.24.42	23.55.48 23.25. 3	30.45	23.40.26
Jul. 21	claro	44756 43680	24. 6.41 23.35.45	24. 7. 3 23.36. 7	30.56	23.51.35
Aug. 9	claro	54710 53538	28.40.58 28. 9.49	28.41.26 28.10.16	31.10	28.25.52
Aug. 10	ut antea	55356 54179	28.58. 2 28.26.54	28.58.31 28.27.21	31.10	28.42.56
Aug. 20	Sole claro, cælo nubo	62668 61409	32. 4.29 31.33.16	32. 5. 1 31.33.47	31.14	31.49.24
Aug. 26	clarissimo	67708 66390	34. 6. 4 33.34.49	34. 6.39 33.35.23	31.16	33.51. 1
Aug. 27	ut antea	68600 67272	34.27. 0 33.55.46	34.27.35 33.56.21	31.14	34.11.58
Aug. 28	ut antea	69510 68162	34.48.11 34.16.45	34.48.46 34.17.20	31.27	34.33. 3
Aug. 29	ut antea	70430 69075	35. 9.25 34.38. 6	35.10. 0 34.38.41	31.19	34.54.21
Aug. 31	ut antea	72315 70936	35.52.21 35.21. 1	35.52.58 35.21.36	31.22	35.37.17
Sept. 2	pallido	74219 72862	36.35.50 36. 4.40	36.36.28 36. 5.17	31.11	36.20.53
Sept. 3	nebuloso	75255 73846	36.57.48 36.26.40	36.58.27 36.27.17	31.10	36.42.52
Sept. 6	claro	78336 76877	34. 4.28 33.33. 8	38. 5. 9 37.33.48	31.21	37.49.29
Sept. 7	claro	79391 77917	38.26.47 37.55.29	38.27.28 37.56.10	31.18	38.11.49
Sept. 8	claro	80460 78977	38.49.13 38.18. 3	38.49.56 38.18.44	31.12	38.34.20

Sept.

		Tangen tes cor- ræ a p- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
1703						
Sept. 9	nebuloso	81547 80050	39.11.46 38.40.38	39.12.29 38.41.21	31. 8	38.56.55
Sept. 13	claro, cælo nubilo	86084 84504	40.43.24 40.11.56	40.44. 9 40.12.40	31.29	40.28.25
Sept. 15	ut antea	88444 86830	41.29.27 40.58. 4	41.30.13 40.58.50	31.23	41.14.32
Sept. 16	ut antea	89645 88023	41.52.29 41.21.19	41.53.17 41.22. 5	31.12	41.37.41
Sept. 17	ut antea	90875 89222	42.15.46 41.44.24	42.16.34 41.45.11	31.23	42. 0.53
Sept. 19	Sole claro	93278 91674	42. 2.20 42.30.46	43. 3. 9 42.31.34	31.35	42.47.22
Sept. 20	ut antea	94665 92940	43.25.48 42.54.16	43.26.37 42.55. 5	31.32	43.10.51
Sept. 21	ut antea	95965 94215	43.49.13 43.17.40	43.50. 4 43.18.29	31.35	43.34.17
Sept. 22	Sole claro specie tremula	97271 95500	44.12.27 43.40.55	44.13.18 43.41.43	31.35	43.57.31
Sept. 23	Sole subpallido	98618 96835	44.36. 5 44. 4.44	44.36.57 44. 5.35	31.22	44.21.16
Sept. 25	Sole claro	101344 99494	45.22.57 44.51.17	45.23.49 44.52. 9	31.40	45. 7.59
Sept. 26	ut antea	102739 100870	45.46.26 45.14.54	45.47.20 45.15.46	31.34	45.31.33
Sept. 27	pallido	104142 102256	46. 9.44 45.38.20	46.10.38 45.39.13	31.25	45.54.56
Oct. 1	subpallido	110014 107988	47.43.48 47.11.58	47.44.45 47.12.54	31.51	47.28.50
Oct. 6	clarissimo	117763 115601	49.39.48 49. 8.19	49.40.50 49. 9.19	31.31	49.25. 5

Oct.

1703		Tangen- tes cor- re- ctæ a pe- numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis		Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	G	I	II
O ^h . 11	claro	126077	51.34.47			51.35.53			31.39		51.20.4		
		123722	51. 3.10			51. 4.14							
O ^h . 13	clarissimo	129552	52.20. 8			52.21.26			31.38		52. 5.27		
		127117	51.48.32			51.49.38							
O ^h . 14	ut antea	131314	52.42.34			52.43.43			31.44		52.27.51		
		128831	52.10.52			52.11.59							
O ^h . 17	claro	138618	54.11.35			54.12.47			29.40				
		136127	53.41.56			53.43. 7							
O ^h . 25	ut antea	152180	56.41.26			56.42.47			31.52		56.26.52		
		149153	56. 9.36			56.10.55							
O ^h . 27	ut antea	156236	57.22.43			57.24. 6			31.38		57. 8.17		
		153117	56.51. 6			56.52.28							
O ^h . 29	clarissimo	160397	58. 3.30			58. 4.56			31.51		57.49. 0		
		157138	57.31.42			57.33. 5							
O ^h . 30	claro	162469	58.23.15			58.24.43			31.30		58. 8.58		
		159287	57.51.48			57.53.13							
O ^h . 31	ut antea	164575	58.42.58			58.44.27			31.37		58.28.39		
		161219	58.11.23			58.12.50							
Nov. 3	claro	170972	59.40.37			59.42.10			31.35		59.26.23		
		167416	59. 9. 4			59.10.35							
Nov. 5	clarissimo, cælo subnubilo	175315	60.17.58			60.19.34			31.44		60. 3.42		
		171620	59.46.17			59.47.50							
Nov. 6	ut antea	177517	60.36.23			60.37.59			31.50		60.21. 4		
		173740	60. 4.35			60. 6. 9							
Dec. 5	Sole claro	236509	67. 4.50			67. 6.59			32. 4		66.50.57		
		230500	66.32.49			66.34.55							
Dec. 9	ut antea	241908	67.32.27			67.34.38			31.57		67.18.40		
		235688	67. 0.32			67. 2.41							
Dec. 10	clarissimo	243075	67.38.16			67.40.30			32. 6		67.24.27		
		236778	67. 6.14			67. 8.24							

Dec.

		Tangen tes cor- re- ctæ a pe- numbra	Diff. a vertice apparen- timborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
1703						
Dec. 11	ut antea	244159 237807	67.43.39 67.11.35	67.45.53 67.13.45	32. 8	67.29.49
Dec. 12	Sole languido	245129 238760	67.48.25 67.16.28	67.50.40 67.18.39	32. 1	67.34.40
Dec. 13	clarissimo	246086 239639	67.53. 6 67.20.57	67.55.21 67.23. 8	32.13	67.39.15
Dec. 14	ut antea	246892 240408	67.57. 1 67.24.53	67.59.17 67.27. 3	32.14	67.43.10
Dec. 15	ut antea	247608 241092	68. 0.29 67.28.20	68. 2.45 67.30.32	32.13	67.46.39
Dec. 16	pallido	248245 241706	68. 3.33 67.31.36	68. 5.50 67.33.39	32.11	67.49.45
Dec. 17	claro	248787 242233	68. 6. 8 67.34. 5	68. 8.25 67.36.18	32. 7	67.52.22
Dec. 21	claro	249957 243331	68.11.43 67.39.33	68.14. 0 67.41.47	32.13	67.57.54
Dec. 30	ut antea	246879 240380	67.56.57 67.24.44	67.59.13 67.26.56	32.17	67.43. 5
Dec. 31	ut antea	246067 239593	67.53. 1 67.20.44	67.55.16 67.22.55	32.21	67.39. 5
1704						
Jan. 12	cælo subnubilo	229954 224210	66.29.50 65.57.46	66.31.56 65.59.49	32. 7	66.15.53
Jan. 16	Sole clarissimo	222543 217101	65.48.11 65.16. 6	65.50.13 65.18. 5	32. 8	65.34. 9
Jan. 18	ut antea	218568 213311	65.24.53 64.52.59	65.26.53 64.54.55	31.58	65.10.54
Jan. 22	Sole pallido	210243 205327	64.33.44 64. 1.58	64.35.38 64. 3.49	31.49	64.19.44

Jan.

1704		Tangen- tes cor- dæ ape- numbra	Dift. a vertice apparent limborum	Dift. a vertice vera lim- borum	Diam. app. Solis	Dift. a vertice vera cen- tri
			G I II	G I II	I II	G I II
Jan. 25	Sole elaro, specie tremula	103750 199072	63.51.30 63.19.42	63.53.20 63.21.30	31.50	63.37.25
Jan. 26	Sole clarissimo	101567 196943	63.36.47 63. 4.49	63.38.36 63. 6.35	32. 1	63.22.35
Jan. 30	claro	192696 188408	62.34.22 62. 2.32	62.36. 6 62. 4.14	31.52	62.20.10
Feb. 1	ut antea	188257 184082	62. 1.24 61.29.15	62. 3. 6 61.30.55	32.11	61.47. 0
Feb. 2	claro	186009 181948	61.44.14 61.12.23	61.45.56 61.14. 2	31.54	61.29.59
Feb. 12	ut antea	164125 160768	58.38.47 58. 7. 4	58.40.16 58. 8.30	31.46	58.24.23
Feb. 13	claro	162000 158726	58.18.49 57.47.18	58.20.16 57.48.43	31.33	58. 4.30
Feb. 14	claro, specie tremula	159930 156654	57.59. 0 57.26.52	58. 0.26 57.28.16	32.10	57.44.22
Feb. 15	ut supra	157827 154624	57.38.29 57. 6.29	57.39.54 57. 7.51	32. 3	57.23.53
Feb. 16	Sole claro	155747 152595	57.17.49 56.45.46	57.19.12 56.47. 7	32. 5	57. 3.10
Feb. 18	pallidissimo	151645 148644	56.35.52 56. 4.10	56.37.13 56. 5.29	31.44	56.21.21
Feb. 20	claro	147651 144738	55.53.29 55.21.33	55.54.48 55.22.51	31.57	55.38.50
Feb. 21	Sole clarissimo	145666 142822	55.31.49 55. 0. 5	55.33. 6 55. 1.20	31.46	55.17.13
Feb. 28	Sole claro	132501 129970	52.57.28 52.25.30	52.58.38 52.26.38	32. 0	52.42.38
Mar. 9	claro	115493 113365	49. 6.44 48.35. 4	49. 7.45 48.36. 3	31.42	48.51.54

Mart.

1704		Tangen tes cor- dæ a pe- numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis	Diff. a vertice vera cen- tri		
			G	I	II	G	I	II		G	I	II
Mar. 10	clarissimo	113917 111824	48.43.21 48.11.42			48.44.21 48.12.41			31.40	48.28.31		
Mar. 15	claro, cælo nubilo	106319 104387	46.45.15 46.13.46			46.46.11 46.14.40			31.31	46.30.26		
Mar. 19	claro	100618 98778	45.10.36 44.38.52			45.11.28 44.39.44			31.44	44.55.36		
Mar. 21	claro	97882 96098	44.23.13 43.51.36			44.24.4 43.52.27			31.37	44.8.16		
Mar. 26	ut antea	91379 89713	42.25.15 41.53.46			42.26.3 41.54.34			31.29	42.10.19		
Mar. 27	ut antea	90134 88489	42.1.46 41.30.19			42.2.33 41.31.6			31.27	41.46.50		
Mar. 30	claro, cælo nubilo	86517 84920	40.51.55 40.20.17			40.52.41 40.21.2			31.39	40.36.51		
Apr. 2	Sole claro	83045 81563	39.42.28 39.12.6			39.43.12 39.12.49			30.23	39.28.1		
Apr. 4	Sole claro, cælo nubilo	80829 79363	38.56.54 38.26.12			38.57.37 38.26.54			30.43	38.42.16		
Apr. 5	claro, cælo nubilo	79724 78271	38.33.48 38.3.8			38.34.30 38.3.49			30.41	38.19.10		
Apr. 6	claro, cælo nubilo	78658 77230	38.11.17 37.40.44			38.11.58 37.41.25			30.53	37.56.42		
Apr. 9	ut antea	75543 74168	37.4.7 6.33.49			37.4.46 36.34.27			30.19	36.49.37		
Apr. 11		73539 72151	36.19.49 35.48.38			36.20.28 35.49.15			31.13	36.4.51		
Apr. 15	Sole claro, cælo nubilo	69710 68372	34.52.49 34.21.40			34.53.25 34.22.15			31.10	34.37.50		
Apr. 16	Sole obnubilato	68801 67496	34.31.42 34.1.4			34.32.18 34.1.39			30.39	34.16.59		

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Apr.

1704		Tangen- tes cor- re ctæ ap- pen- dura	Diff. a vertice apparentis		Diff. a vertice vera lim- borum		Diam. app. Soli		Diff. a vertice vera cen- tri	
			G	I	G	I	I	I	G	I
Apr. 17	ut antea	67887 66604	34.10.17	33.39.54	34.10.52	33.40.29	30.23	33.53.41		
Apr. 18	ut antea	67009 65730	33.49.33	33.19.1	33.50.8	33.19.34	30.34	33.34.51		
Apr. 19	claro	66135 64850	33.28.43	32.57.48	33.29.17	32.58.21	30.56	33.13.49		
Apr. 21	ut antea	64443 63161	32.47.56	32.16.57	32.48.29	32.17.9	31.20	32.32.49		
Apr. 22	claro	63619 62342	32.27.51	31.56.25	32.28.23	31.56.57	31.26	32.12.40		
Apr. 23	ut antea	62803 61549	32.7.48	31.36.42	32.8.20	31.37.14	31.6	31.52.47		
Apr. 24	ut antea	61999 60757	31.47.55	31.16.54	31.48.27	31.17.24	31.3	31.32.56		
Apr. 25	ut antea	61211 59971	31.28.17	30.57.6	31.28.47	30.57.36	31.11	31.13.12		
Apr. 26	Sole claro	60442 59224	31.8.59	30.38.9	31.9.29	30.38.59	30.50	30.54.4		
Apr. 27		59675 58467	30.49.36	30.18.49	30.50.6	30.19.18	30.48	30.34.42		
Apr. 29	Sole claro	58219 57005	30.12.28	29.41.8	30.12.57	29.41.36	31.21	29.57.16		
Maj. 2	nubilo	56027 54908	29.15.41	28.46.13	29.16.9	28.46.41	29.28	29.12.5		
Maj. 5	claro	54106 52947	28.24.58	27.54.0	28.25.26	27.54.27	30.59	28.9.56		
Maj. 10	Sole claro, celo nubilo	51069 49965	27.3.10	26.32.57	27.3.36	26.33.22	30.14	26.48.29		
Maj. 12	clarissimo	49935 48863	26.32.7	26.2.30	26.32.32	26.2.54	29.38	26.17.43		

Maj.

		Tangen tes cor re ctæ ap pe num bra	Diff. a vertice apparen s lim borum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G	I	II	I	II
1704						
Maj. 17	ut antea	47382 46284	25.21.9 24.50.12	25.21.32 24.50.35	30.57	25. 6. 3
Maj. 24	nubilo	44355 43289	23.55.12 23.24.26	23.55.34 23.24.47	30.47	23.40.10
Jun. 9	clarissimo	39933 38892	21.46.5 21.15.7	21.46.25 21.15.26	30.59	21.30.55
Jun. 10	ut antea	39779 38732	21.41.32 21.10.20	21.41.52 21.10.39	31.13	21.26.15
Jun. 11	ut antea	39635 38589	21.37.16 21. 6. 4	21.37.35 21. 6.23	31.12	21.21.59
Jun. 12	Sole claro	39496 38455	21.33.7 21. 2. 4	21.33.26 21. 2.23	31. 3	21.17.54
Jun. 15	clarissimo	39182 38141	21.23.46 20.52.38	21.24. 5 20.52.57	31. 8	21. 8.31
Jun. 16	nebuloso	39085 38068	21.20.53 20.50.27	21.21.12 20.50.46	30.26	21. 5.59
Jun. 18	clarissimo	38990 37960	21.18. 4 20.47.13	21.18.23 20.47.32	30.51	21. 2.57
Jun. 19	ut antea	38950 37922	21.16.51 20.46. 4	21.17.10 20.46.23	30.47	21. 1.46
Jun. 20	claro	38934 37900	21.16.24 20.45.24	21.16.43 20.45.43	31. 0	21. 1.13
Jun. 21	clarissimo	38928 37890	21.16.12 20.45. 5	21.16.31 20.45.24	31. 7	21. 0.57
Jun. 22	nubilo	38929 37900	21.16.14 20.45.24	21.16.33 20.45.43	30.50	21. 1. 8
Jun. 24	claro	38980 37950	21.17.45 20.46.55	21.18. 4 20.47.14	30.50	21. 2.39
Jun. 25	clarissimo	39032 37993	21.19.18 20.48.12	21.19.37 20.48.31	31. 6	21. 4. 4

M m 2

Jul.

1704		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparens limborum.			Diff. a vertice vera lim borum			Diam. app. Solis	Diff. a vertice vera cen tri			
			G	I	II	G	I	II	I	II	G	I	II
Jun. 26	ut antea	39090 38055	21.21. 2			21.21.21			30.58		21. 5.52		
			20.50. 4			20.50.23							
Jun. 29	Sole claro, sed dubia	39352 38328	21.28.51			21.29.10			30.36		21.13.52		
			20.57.15			20.58.34							
Jun. 30	clarissimo	39480 38435	21.32.39			21.32.58			31.12		21.17.22		
			21. 1.27			21. 1.46							
Jul. 1	claro	39607 38565	21.36.25			21.36.44			31. 4		21.21.12		
			21. 5.21			21. 5.40							
Jul. 2	Sole claro	39755 38717	21.40.49			21.41. 9			30.55		21.25.41		
			21. 9.55			21.10.14							
Jul. 3	clarissimo	39911 38866	21.45.26			21.45.46			31. 6		21.30.13		
			21.14.21			21.14.40							
Jul. 4	ut antea	40088 39038	21.50.42			21.51. 2			31.14		21.35.25		
			21.19.29			21.19.48							
Jul. 5	ut antea	40269 39221	21.56. 4			21.56.24			31. 9		21.40.49		
			21.24.56			21.25.15							
Jul. 7	Sole claro, cælo nubilo	40678 39627	22. 8. 7			22. 8.27			31. 6		21.52.54		
			21.37. 2			21.37.21							
Jul. 8	claro	40901 39856	22.14.42			22.15. 2			30.53		21.59.35		
			21.43.49			21.44. 9							
Jul. 9	clarissimo	41143 40097	22.21.49			22.22. 9			30.51		22. 6.43		
			21.50.58			21.51.18							
Jul. 10	clarissimo	41394 40349	22.29.12			22.29.32			30.47		22.14. 8		
			21.58.25			21.58.45							
Jul. 11	ut antea, cælo nubilo	41664 40605	22.37. 7			22.37.27			31. 9		22.21.52		
			22. 5.58			22. 6.18							
Jul. 12	clarissimo	41950 40889	22.45.29			22.45.50			31. 9		22.30.15		
			22.14.21			22.14.41							
Jul. 13		42235 41180	22.53.48			22.54. 9			30.54		22.38.42		
			22.22.55			22.23.15							

Jul.

1704		Tangen tes cor- dæ a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	I	I	G
Jul. 14	claro, specie tremula	42535 41480	23. 2.32 22.31.43	23. 2.54 22.32. 4	30.50	22.47.29
Jul. 16	clarissimo	43196 42129	23.21.45 22.50.42	23.22. 6 22.51. 2	31. 4	23. 6.34
Jul. 18	ut antea	43902 42832	23.42. 9 23.11.11	23.42.31 23.11.32	30.59	23.27. 1
Jul. 21	ut antea	45062 43982	24.15.26 23.44.27	24.15.48 23.44.48	31. 0	24. 0.18
Jul. 22	ut antea	45481 44401	24.27.24 23.56.30	24.27.46 23.56.52	30.54	24.12.19
Jul. 23	ut antea	45909 44826	24.39.34 24. 8.41	24.39.57 24. 9. 3	30.54	24.24.30
Jul. 24	ut antea	46343 45260	24.51.52 24.21. 3	24.52.15 24.21.25	30.50	24.36.50
Jul. 25	ut antea	46799 45711	25. 4.45 24.33.57	25. 5. 8 24.34.20	30.48	24.49.44
Jul. 26	ut antea	47269 46173	25.19.23 24.47. 5	25.19.46 24.47.28	32.18	25. 3.36
Jul. 27	ut antea	47753 46650	25.31.33 25. 0.33	25.31.56 25. 0.56	31. 0	25.16.26
Jul. 28	ut antea	48240 47141	25.45.10 25.14.22	25.45.34 25.14.45	30.49	25.30. 9
Jul. 29	ut antea	48752 47637	25.59.25 25.28.18	25.59.49 25.28.41	31. 8	25.44.15
Jul. 30	Sole claro	49268 48154	26.13.43 25.42.45	26.14. 7 25.43. 9	30.58	25.58.38
Jul. 31	clarissimo	49791 48685	26.28. 9 25.57.33	26.28.34 25.57.57	30.37	26.13.15
Aug. 1	ut antea	50355 49226	26.43.39 26.12.33	26.43.54 26.12.57	30.57	26.28.25

Aug.

1704		Tangen- tes corre- ctæ a pe- numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis	Diff. a vertice vera cen- tri		
			G	I	II	G	I	II		G	I	II
Aug. 2	Sole clarissimo	509 14 49 78 1	26.58.57			26.59.23			31. 6	26.43.50		
Aug. 3	ut antea	514 80 50 34 3	27.14.22			27.14.48			31. 4	26.59.16		
Aug. 4	ut antea	520 67 50 9 27	27.30.16			27.30.42			30.58	27.15.13		
Aug. 5	ut antea	526 77 51 52 0	27.46.44			27.47.10			31.16	27.31.32		
Aug. 8	Sole clarissimo	545 47 53 37 6	28.36.39			28.37. 7			31.11	28.21.31		
Aug. 9	ut antea	552 00 54 02 3	28.53.55			28.54.23			31.51	28.38.27		
Aug. 10	Sole clarissimo, cælo nubilo	558 73 54 68 1	29.11.36			29.12. 4			31.23	28.56.22		
Aug. 12	ut antea	572 44 56 05 0	29.47.18			29.47.47			31. 5	29.32.14		
Aug. 13	clarissimo	579 50 56 74 1	30. 5.31			30. 6. 0			31.16	29.50.22		
Aug. 14	ut antea	586 75 57 45 4	30.24. 7			30.24.36			31.23	30. 8.54		
Aug. 15	claro, cælo nubilo	594 02 58 18 1	30.42.40			30.43.10			31.12	30.27.34		
Aug. 16	specie valde tremula	601 48 58 9 22	31. 1.34			31. 2. 4			31. 8	30.46.30		
Aug. 17	clarissimo	609 14 59 67 0	31.20.50			31.21.20			31.13	31. 5.43		
Aug. 18	ut antea	616 88 60 43 9	31.40.10			31.40.41			31.17	31.25. 2		
Aug. 19	ut antea	624 76 61 22 0	31.59.44			32. 0.16			31.42	31.44.25		

Aug.

		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparentis limborum			Diff. a vertice vera lim borum			Diam. app. Solis		Diff. a vertice vera cen tri		
			G	I	II	G	I	II	I	II	G	I	II
1704													
Aug. 20	ut antea	63271 62015	32.19.19			32.19.51			31.2		32.4.20		
Aug. 21	ut antea	64090 62817	32.39.20			32.39.52			31.11		32.24.16		
Aug. 25	ut antea	67492 66180	34.0.59			34.1.34			31.13		33.45.57		
Aug. 26	ut antea	68388 67059	34.22.3			34.22.38			31.20		34.6.58		
Aug. 27	ut antea	69291 67945	34.43.7			34.43.42			31.28		34.27.58		
Aug. 28	claro	70210 68859	35.4.22			35.4.57			31.19		34.49.17		
Aug. 29	nubilo	71143 69777	35.25.45			35.26.21			31.24		35.10.39		
Aug. 30	nebuloso	72087 70716	35.47.12			35.47.48			31.14		35.32.11		
Aug. 31	clarissimo	73052 71660	36.8.56			36.9.33			31.26		35.53.50		
Sept. 1	ut antea	74027 72622	36.30.41			36.31.19			31.26		36.15.36		
Sept. 3	ut antea	76027 74602	37.14.40			37.15.19			31.16		36.59.41		
Sept. 4	Sole clarissimo	77053 75613	37.36.32			37.37.12			30.54		37.21.45		
Sept. 6	nebuloso	79128 77672	38.21.14			38.21.56			31.1		38.6.25		
Sept. 7	claro	80203 78719	38.43.50			38.44.32			31.17		38.28.53		
Sept. 8	clarissimo	81291 79788	39.6.29			39.7.12			31.21		38.51.31		

Sept.

1704		Tangen tes corv de apt numbra	Dift. a vertice apparens limborum	Dift. a vertice vera lim borum	Diam. app. Solis	Dift. a vertice vera cen tri
		G 1 11	G 1 11	G 1 11	G 1 11	G 1 11
Sept. 9	ut antea	82383 80883	38.28.56 38.58. 4	39.29.41 38.58.47	30.54	39.14.14
Sept. 11	ut antea	84632 83097	40.14.31 39.43.32	40.15.15 39.44.15	31. 0	39.59.45
Sept. 12	Sole claro, cælo nubilo	85797 84230	40.37.43 40. 6.26	40.38.28 40. 7.10	31.18	40.22.49
Sept. 13	Sole claro	86961 85383	41. 0.38 40.29.54	41. 1.24 40.30.39	30.45	40.46. 1
Sept. 14	pallido	88055 86539	41.21.55 40.52.21	41.22.42 40.53. 7	29.35	41. 7.54
Sept. 18	clarissimo	93053 91377	42.56.21 42.25.12	42.57.10 42.26. 0	31.10	42.41.35
Sept. 19	claro	94334 92633	43.19.48 42.48.36	43.20.38 42.49.25	31.13	43. 5. 1
Sept. 20	pallido	95633 93903	43.43.16 43.11.57	43.44. 6 43.12.46	31.20	43.28.26
Sept. 21	claro	96950 95193	44. 6.46 43.36.21	44. 7.37 43.37.11	30.26	43.52.24
Sept. 22	clarissimo	98276 96481	44.30. 6 43.58.26	44.30.57 43.59.17	31.40	44.15. 7
Sept. 24	ut antea	100966 99158	45.16.32 44.45.28	45.17.24 44.46.19	31. 5	45. 1.51
Sept. 25	claro	102379 100538	45.40.24 45. 9.13	45.41.17 45.10. 5	31.22	45.25.41
Sept. 26	pallido	103815 101916	46. 4.21 45.32.37	46. 5.15 45.33.30	31.45	45.49.22
Sept. 27	clarissimo	105217 103320	46.27.23 45.56. 8	46.28.18 45.57. 2	31.16	46.12.40
Sept. 28	pallido	106655 104746	46.50.40 46.19.40	46.51.36 46.20.35	31. 1	46.36. 5

Sept.

1704		Tangen- tes corre- ctæ ap- p. numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	II	I	II
Sept. 30	claro	109634	47.37.52	47.38.49	31.34	47.23.2
		107633	47. 6.19	47. 7.15		
Oct. 8		122287	50.43.32	50.44.36	31.40	50.28.46
		120016	50.11.53	50.12.56		
Oct. 9		123950	51. 6.15	51. 7.19	31.24	50.51.37
		121659	50.34.51	50.35.55		
Oct. 10	clarissimo	125639	51.28.58	51.30. 3	31.12	51.14.27
		123327	50.57.47	50.58.51		
Oct. 11	ut antea	127365	51.51.47	51.52.53	31.26	51.37.10
		124997	51.20.22	51.21.27		
Oct. 23	Sole claro, czło núbilo	149682	56.25.13	56.16.33	31.50	56. 0.38
		146724	55.43.25	55.44.43		
Oct. 25	ut antea	153680	56.56.52	56.58.14	31.43	56.42.22
		150624	56.25.11	56.26.31		
Oct. 27	Sole clarissimo	157776	57.37.59	57.39.23	31.31	57.23.37
		154625	57. 6.30	57. 7.52		
Oct. 31	ut antea	166130	58.57.17	58.58.47	31.24	58.43.10
		162768	58.26. 5	58.27.33		
Nov. 23	Sole claro	216139	65.10.18	65.12.16	31.38	64.56.27
		211029	64.38.43	64.40.38		
Nov. 24	Sole maxime languido	218132	65.22.17	65.24.16	31.27	65. 8.32
		212975	64.50.53	64.52.49		
Dec. 10	Sole claro	244024	67.42.59	67.45.13	32.59	67.28.43
		237568	67.10. 4	67.12.14		
Dec. 27	Sole claro	248229	68. 3.57	68. 6.13	32. 4	67.50.11
		241805	67.31.56	67.34. 9		
1705						
Jan. 7	Sole pallido	236843	67. 6.34	67. 8.44	32.10	66.52.39
		230805	66.34.28	67.36.34		

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Feb.

1705		Tangen- tes cor- re a pe- numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis	Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I II	G	I	II
Feb. 17	claro	152126 149114	56.40.54	56.9.11		56.42.15 56.10.30			31.45	56.26.22		
Feb. 19	ut antea	148115 145207	55.58.29	55.26.45		55.59.48 55.28. 2			31.46	55.43.55		
Feb. 20	clarissimo	146148 143281	55.37. 7	55. 5.16		55.38.24 55. 6.31			31.53	55.22.27		
Feb. 21	ut antea	144171 141413	55.15.15	54.44. 3		55.16.31 54.45.17			31.14	55. 0.54		
Feb. 22	ut antea	142271 139520	54.53.49	54.22. 9		54.55. 4 54.23.22			31.42	54.39.13		
Feb. 23	ut antea	140376 137657	54.32. 6	54. 0.14		54.33.20 54. 1.26			31.54	54.17.23		
Feb. 28	clarissimo	131110 128631	52.40. 0	52. 8. 2		52.41. 9 52. 9. 9			32. 0	52.25. 9		
Mar. 1	ut antea	129232 126882	52.17.19	51.45.26		52.18.27 51.46.32			31.55	52. 2.29		
Mar. 2	ut antea	127574 125185	51.54.31	51.22.54		51.55.38 51.23.59			31.39	51.39.48		
Mar. 3	ut antea	125823 123473	51.31.25	50.59.46		51.32.51 51. 0.50			31.41	51.16.40		
Mar. 4	pallido	124087 121818	51. 8. 6	50.37. 3		51. 9.11 50.38. 7			31. 4	50.53.39		
Mar. 7	claro	119095 116894	49.58.51	49.27.14		49.59.54 49.28.15			31.39	49.44. 4		
Mar. 17	claro	103770 101888	46. 3.25	45.32. 9		46. 4.19 45.33. 2			31.17	45.48.41		
Apr. 5	clarissimo	79982 78479	38.39.12	38. 7.28		38.39.54 38. 8. 9			31.45	38.24. 2		
Apr. 9	clarissimo	75790 74358	37. 9.31	36.38. 1		37.10.10 36.38.39			31.31	36.54.24		

Apr.

1705		Tangen tes cor re a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G I II	G I II	I II	G I II	
Apr. 15	ut antea	69950 68605	34.58.22 34.27.7	34.58.57 34.27.42	31.15	34.43.19
Apr. 16	ut antea	69024 67688	34.36.54 34.5.38	34.37.29 34.6.13	31.16	34.21.51
Apr. 17	ut antea	68118 66798	34.15.43 33.44.31	34.16.18 33.45.5	31.13	34.0.41
Apr. 21	Sole clarissimo	64647 63361	32.52.53 32.21.31	32.53.26 32.22.3	31.23	32.37.44
Apr. 22	ut antea	63807 62548	32.32.26 32.1.31	32.32.58 32.2.3	30.55	32.17.30
Apr. 24	pallido	62184 60940	31.52.30 31.21.29	31.53.2 31.22.0	31.2	31.37.31
Apr. 27	ut antea	59853 58639	30.54.5 30.23.12	30.54.33 30.23.41	30.54	30.39.8
Apr. 29	ut antea	58376 57177	30.16.29 29.45.35	30.16.58 29.46.3	30.55	30.1.30
Apr. 30	Sole claro	57647 56475	29.57.45 29.27.21	29.58.14 29.27.49	30.25	29.43.1
Maj. 1	clarissimo	56950 55754	29.39.42 29.8.28	29.40.11 29.8.56	31.15	29.24.33
Maj. 3	Sole claro, czło nubilo	55568 54402	29.3.37 28.32.49	29.4.5 28.33.17	30.48	28.48.41
Maj. 10	clarissimo	51226 50069	27.7.28 26.35.48	27.7.54 26.36.14	31.40	26.52.4
Maj. 11	pallido	50221 49522	26.50.57 26.20.44	26.51.23 26.21.9	30.14	26.36.16
Maj. 14	claro	48997 47909	26.6.13 25.35.57	26.6.37 25.36.21	30.16	25.51.29
Maj. 15	claro	48500 47391	25.52.24 25.21.24	25.52.48 25.21.47	31.1	25.37.17

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Maj.

1705		Tangen tes cor- ræ a pe- nombra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	II	I	II
Maj. 16	ut antea	47989 46885	25.38.9 25.7.10	25.38.33 25.7.33	31.0	25.23.3
Maj. 18	nebuloso	46910 45932	25.9.0 24.40.13	25.9.23 24.40.36	28.47	
Maj. 19	clarissimo	46561 45473	24.58.2 24.27.10	24.58.25 24.27.32	30.53	24.42.58
Maj. 22		45256 44182	24.20.59 23.50.12	24.21.21 23.50.34	30.47	24.55.57
Maj. 24		44441 43386	23.57.39 23.27.14	23.58.1 23.27.35	30.26	23.42.48
Maj. 29	clarissimo	42671 41617	23.6.30 22.35.44	23.6.51 22.36.4	30.47	22.51.27
Maj. 30	claro	42354 41309	22.57.16 22.26.42	22.57.37 22.27.2	30.35	22.42.19
Maj. 31	Sole valde nebuloso	42057 41010	22.48.37 22.17.55	22.48.58 22.18.15	30.43	22.33.36
Jun. 2	Sole claro	41500 40458	22.32.20 22.1.39	22.32.40 22.1.59	30.41	22.17.19
Jun. 7	clarissimo	40341 39300	21.58.11 21.27.18	21.58.31 21.27.37	30.54	21.43.4
Jun. 9	pallido	39956 38932	21.46.47 21.16.19	21.47.7 21.16.38	30.29	21.31.52
Jun. 17	claro	39057 38014	21.20.4 20.48.49	21.20.23 20.49.8	31.15	21.4.45
Jun. 22	fulgidissimo	38928 37896	21.16.12 20.45.16	21.16.31 20.45.35	30.56	21.1.3
Jun. 24	claro	38953 37942	21.16.56 20.46.40	21.17.15 20.46.59	30.16	21.2.7
Jun. 25	Sole claro	39013 37983	21.18.44 20.47.55	21.19.3 20.48.14	30.49	21.3.38

Jun.

		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim borum		Diam. app. Solis		Diff. a vertice vera cen tri	
			G	I	G	I	I	II	G	I
1705										
Jun. 26	clarissimo	39077 38040	21.20.40 20.49.36		21.20.59 20.49.55		31.	4	21.	5.27
Jun. 27	ut antea	39144 38118	21.22.40 20.51.56		21.22.59 20.52.15		30.	44	21.	7.37
Jun. 28	ut antea	39233 38193	21.25.18 20.54.12		21.25.37 20.54.31		31.	6	21.	10. 4
Jun. 29	ut antea	39331 38292	21.28.13 20.57.11		21.28.32 21.57.30		31.	2	21.	13. 1
Jul. 2		39710 38668	21.39.29 21. 8.25		21.39.49 21. 8.44		31.	5	21.	24.26
Jul. 3		40035 38996	21.49. 7 21.18.14		21.49.27 21.18.33		30.	54	21.	34. 0
Jul. 6		40410 39367	22. 0.13 21.29.18		22. 0.33 21.29.37		30.	56	21.	45. 5
Jul. 10		41322 40283	22.27. 5 21.56.28		22.27.25 21.56.47		30.	58	22.	12. 6
Jul. 11		41589 40537	22.34.55 22. 3.58		22.35.15 22. 4.17		30.	58	22.	19.46
Jul. 13		42150 41109	22.51.19 22.20.49		22.51.40 22.21. 9		30.	51	22.	36.24
Jul. 14	Majorem tangentem in meis adversariis perperam confignatam sic restitui ex li bello supputationum, quas me curante, diu subduce bat Antonius Rosellius Pice nus, dum vixit, Astronomiæ studiosus	42444 41406	22.59.55 22.29.34		23. 0.16 22.29.54		30.	22	22.	45. 5
Jul. 15		42774 41717	23. 9.30 22.38.41		23. 9.51 22.39. 1		30.	50	22.	54.26

Jul.

1705		Tangen- tes cor- re a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	II	I	II
Jul. 16		43113 42046	23.19.21 22.48.18	23.19.42 22.48.39	31. 3	23. 4.10
Jul. 17		43450 42391	23.29.50 22.58.21	23.30.11 22.58.42	31.29	23.14.26
Jul. 19	Sole clarissimo	44182 43111	23.50.12 23.19.17	23.50.34 23.19.38	30.56	23.35. 6
Jul. 20	ut antea	44559 43501	24. 1. 2 23.30.35	24. 1.24 23.30.56	30.28	23.46.10
Jul. 22	ut antea	45366 44286	24.24. 7 23.53.12	24.24.29 23.53.34	30.55	24. 9. 1
Jul. 24	ut antea	46231 45142	24.48.42 24.17.43	24.49. 5 24.18. 5	31. 0	24.33.35
Jul. 25	ut antea	46690 45594	25. 1.41 24.30.36	25. 2. 4 24.30.58	31. 6	24.46.31
Jul. 26	ut antea	47150 46054	25.14.38 24.43.41	25.15. 1 24.44. 3	30.58	24.59.32
Jul. 27	pallido	47615 46531	25.27.42 24.57.10	25.28. 5 24.57.33	30.32	25.12.49
Jul. 30	clarissimo	49133 48020	26. 9.59 25.39. 2	26.10.23 25.39.25	30.58	25.54.54
Jul. 31	ut antea	49671 48553	26.24.50 25.53.53	26.25.15 25.54.17	30.58	26. 9.46
Aug. 2	ut antea	50771 49640	26.55. 3 26.24. 0	26.55.29 26.24.25	31. 4	26.39.57
Aug. 3	ut antea	51338 50196	27.10.31 26.39.18	27.10.57 26.39.43	31.14	26.55.20
Aug. 4	Sole clarissimo	51924 50779	27.26.24 26.55.16	27.26.50 26.55.42	31. 8	27.11.16
Aug. 5	ut antea	52512 51370	27.42.12 27.11.23	27.42.39 27.11.49	30.50	27.27.14

Aug.

1705		Tangen tes cor- re- ctæ a pe- numbra	Dist. a vertice apparens limborum	Dist. a vertice vera lim- borum	Diam. app. Solis	Dist. a vertice vera cen- tri
		G I II	G I II	G I II	G I II	G I II
Aug. 6	pallido	53128 51978	27.58.51 27.27.49	27.59.18 27.28.15	31. 3	27.43.46
Aug. 7	clarissimo	53744 52578	28.15.19 27.44. 5	28.15.46 27.44.31	31.15	28. 0. 8
Aug. 8	ut antea	54380 53222	28.32.14 28. 1.22	28.32.42 28. 1.49	30.53	28.17.15
Aug. 12	clarissimo	57065 55876	29.42.40 29.11.41	29.43. 8 29.12. 9	30.59	29.27.38
Aug. 13	ut antea	57763 56565	30. 0.43 29.29.41	30. 1.12 29.30. 9	31. 3	29.45.40
Aug. 14	ut antea	58489 57277	30.19.23 29.48. 9	30.19.52 29.48.37	31.15	30. 4.14
Aug. 15	ut antea	59213 58003	30.37.52 30. 6.54	30.38.21 30. 7.22	30.59	30.22.51
Aug. 16	ut antea	59965 58732	30.56.57 30.25.55	30.57.27 30.26. 4	31.23	30.41.45
Aug. 17	ut antea	60722 59490	31.16. 1 30.44.54	31.16.31 30.45.23	31. 8	31. 0.57
Aug. 18	ut antea	61488 60249	31.35.12 31. 4. 6	31.35.43 31. 4.36	31. 7	31.20. 9
Aug. 19	ut antea	62267 61033	31.54.33 31.23.49	31.55. 5 31.24.20	30.45	31.39.42
Aug. 20	ut antea	63078 61830	32.14.34 31.43.42	32.15. 6 31.44.13	30.53	31.59.39
Aug. 21	ut antea	63882 62632	32.34.16 32. 3.35	32.34.48 32. 4. 7	30.41	32.19.27
Aug. 22	ut antea	64707 63444	32.54.20 32.23.34	32.54.53 32.24. 6	30.47	32.39.29
Aug. 23	ut antea	67277 65974	33.55.53 33.24.51	33.56.28 33.25.25	31. 3	33.40.56

Aug.

1705		Tangen tes cor re ctæ a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
Aug. 27	ut antea	69072 67737	34.38. 1 34. 6.45	34.38.36 34. 7.20	31.16	34.22.58
Aug. 28	ut antea	69988 68639	34.59.15 34.27.55	34.59.50 34.28.30	31.20	34.44.10
Aug. 29	ut antea	70909 69559	35.20.25 34.49.20	35.21. 1 34.49.55	31. 6	35. 5.28
Aug. 31	ut antea	72815 71431	36. 3.37 35.32.19	36. 4.14 35.32.55	31.19	35.48.54
Sept. 3	ut antea	75782 74360	37. 9.20 36.38. 4	37. 9.59 36.38.42	31.17	36.54.20
Sept. 4	ut antea	76785 75365	37.31. 8 37. 0.13	37.31.48 37. 0.52	30.56	37.16.20
Sept. 6	Sole pallido	78862 77415	38.15.36 37.44.45	38.16.17 37.45.23	30.54	38. 0.50
Sept. 9	claro	82108 80608	39.23.20 38.52.17	39.24. 3 38.52.59	31. 4	39. 8.31
Sept. 10	clarissimo	83225 81696	39.46. 8 39.14.51	39.46.51 39.15.54	31.17	39.31.12
Sept. 13	Sole clarissimo	86659 85097	40.54.42 40.23.48	40.55.28 40.24.33	30.55	40.40. 0
Sept. 18	ut antea	92751 91079	42.50.47 42.19.57	42.51.36 42.20.25	31.11	42.56. 0
Sept. 21	ut antea	96620 94874	44. 0.55 43.29.36	44. 1.46 43.30.26	31.20	43.46. 6
Sept. 24	ut antea	100653 98842	45.11.11 44.39.59	45.12. 3 44.40.50	31.13	44.56.26
Sept. 25	ut antea	102051 100203	45.34.54 45. 3.30	45.35.47 45. 4.22	31.25	45.20. 4
Sept. 26	ut antea	103438 101586	45.58. 5 45.27. 3	45.58.59 45.27.56	31. 3	45.43.27

Sept.

1705		Tangen- tes corre- ctæ ap- numbra	Diff. a vertice apparentis limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G I II	G I II	I II	G I II	
Sept. 28	ut antea	106310	46.45. 7	46.46. 2	31. 9	46.30.27
		104400	46.13.59	46.14.53		
Oct. 1	ut antea	110791	47.55.50	47.56.48	31.38	47.40.59
		108763	47.24.13	47.25.10		
Oct. 2	ut antea	112286	48.18.44	48.19.43	31. 0	48. 4.13
		110269	47.47.45	47.48.43		
Oct. 3	ut antea	113825	48.41.57	48.42.56	31. 4	48.27.24
		111772	48.10.54	48.11.52		
Oct. 4	pallido	115401	49. 5.23	49. 6.23	32.39	48.50. 3
		113212	48.32.45	48.33.44		
Oct. 20	nubilo	143360	55. 6. 9	55. 7.24	31.25	54.51.41
		140605	54.34.45	54.35.59		
Oct. 28	clarissimo	159382	57.53.45	57.55.11	31.45	57.39.18
		156166	57.22. 2	57.23.26		
Oct. 29	claro	161483	58.13.54	58.15.21	31.37	57.59.32
		158216	57.42.19	57.43.44		
Nov. 4	claro	174262	60. 9. 3	60.10.38	31.39	59.54.48
		170610	59.37.27	59.38.59		
Nov.10	clarissimo	187465	61.55.23	61.57. 5	31.36	61.41.17
		83389	61.23.49	61.25.29		
Nov.21	claro	211554	64.42. 1	64.43.56	31.48	64.28. 2
		206598	64.10.16	64.12. 8		
Nov.22	ut antea	213610	64.54.49	64.56.45	31.38	64.40.56
		208596	64.23.14	64.25. 7		
Dec. 10	claro	243616	67.40.58	67.43.12	31.50	67.27.17
		237349	67. 9.12	67.11.22		
Dec. 17	claro	248970	68. 7. 1	68. 9.18	31.42	67.53.27
		242496	67.35.23	67.37.36		
Dec. 29	pallido	249665	68.10.28	68.12.45	30.46	67.57.22
		243376	67.39.46	67.41.59		

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Dec.

		Tangen tes cor- re- ctæ a pe- numbra	Diff. a vertice apparentis limborum		Diff. a vertice vera lim- borum		Diam. app. Solis		Diff. a vertice vera cen- tri	
			G	I	G	I	I	I	G	I
1705										
Dec. 20	claro	249923 243308	68.11.33 67.39.26		68.13.50 67.41.39		32.11		67.57.44	
Dec. 22	sublanguido	249909 243270	68.11.29 67.39.20		68.13.46 67.41.33		32.13		67.57.39	
Dec. 25	clarissimo	249422 242808	68. 9.10 67.36.57		68.11.27 67.39.10		32.17		67.55.18	
1706										
Jan. 23	Sole pallido	206992 202168	64.12.52 63.40.52		64.14.44 63.42.41		32. 3		63.58.42	
Jan. 24	pallido	204785 200104	63.58.23 63.26.42		64. 0.14 63.28.30		31.44		63.44.22	
Jan. 25	ut antea	202634 198004	63.44. 1 63.12.16		63.45.51 63.14. 3		31.48		63.29.57	
Jan. 27	claro	198259 193690	63.14. 3 62.41.40		63.15.50 62.43.25		32.25		62.59.37	
Jan. 29	claro	193761 189463	62.42. 6 62.10.28		62.43.51 62.12.11		31.40		62.28. 1	
Jan. 30	claro	191549 187305	62.25.58 61.54.10		62.27.42 61.55.52		31.50		62.11.47	
Jan. 31	ut antea	189304 185222	62. 9.17 61.38. 8		62.11. 0 61.39.49		31.11		61.55.24	
Feb. 9	ut antea	169446 165909	59.27.10 58.55.15		59.28.42 58.56.45		31.57		59.12.43	
Feb. 10	clarissimo	167300 163832	59. 7.55 58.36. 3		59. 9.22 58.37.28		31.54		58.53.25	
Feb. 17	claro	152630 149599	56.46. 5 56.14.21		56.47.26 56.15.41		31.45		56.31.33	
Feb. 26	pallido	135176 132639	53.30.25 52.59.11		53.31.36 53. 0.21		31.15		53.15.58	

Feb.

		Tangen tes cor dæ ape numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G	I	II	I	II
1706						
Feb. 27		133359 130814	53. 8. 7 52.36.22	53. 9.17 52.37.31	31.46	52.53.24
Mar. 17		104096 101213	46. 8.59 45.37.37	46. 9.53 45.38.30	31.23	45.54.11
Mar. 18		102691 100812	45.45.38 45.14. 4	45.46.31 45.14.56	31.35	45.30.43
Mar. 19		101280 99426	45.21.52 44.50. 6	45.22.45 44.50.58	31.47	45. 6.51
Mar. 21	claro	98529 96726	44.34.32 44. 2.47	44.35.23 44. 3.38	31.45	44.19.30
Mar. 22	claro	97171 95426	44.10.41 43.39.33	44.11.32 43.40.23	31. 9	43.55.57
Mar. 23	ut antea	95836 94109	43.46.55 43.15.51	43.47.45 43.16.40	31. 5	43.32.12
Mar. 26	clarissimo	91975 90306	42.36.23 42. 5. 2	42.37.11 42. 5.49	31.22	42.21.30
Apr. 2	claro	83592 81038	39.53.34 39.21.53	39.54.18 39.22.36	31.42	39.38.27
Apr. 8	ut antea	77069 75641	37.37.16 37. 6.14	37.37.56 37. 6.53	31. 3	37.22.24
Apr. 10	ut antea	75004 73606	36.52.17 36.21.19	36.52.56 36.21.57	30.59	36.37.26
Apr. 13	ut antea	72061 70691	35.46.37 35.15.25	35.47.13 35.16. 0	31.13	35.51.36
Apr. 16	ut antea	69238 67901	34.41.53 34.10.37	34.42.28 34.11.12	31.16	34.26.50
Apr. 24	clarissimo	62382 61129	31.57.24 31.26.12	31.57.56 31.26.43	31.13	31.42.19
Apr. 25	claro	61579 60349	31.37.17 31. 6.37	31.37.58 31. 7. 7	30.51	31.22.32

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Apr.

1706		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparuit limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G ° ' "	G ° ' "	G ° ' "	G ° ' "	G ° ' "
Apr. 27	Sole claro	60047 58821	30.59. 0 30.27.58	30.59.30 30.28.27	31. 3	30.43.58
Maj. 6	Sole clarissimo	53777 52620	28.16.13 27.45.11	28.16.41 27.45.38	31. 3	28. 1. 9
Maj. 10	ut antea	51340 50214	27.10.34 26.29.47	27.11. 0 26.40.12	30.48	26.55.56
Maj. 12	Post magnam Solis ecli psim. Cælo subnubilo	50196 49107	26.39.18 26. 9.15	26.39.43 26. 9.39	30. 4	26.24.41
Maj. 13	clarissimo	49665 48545	26.24.41 25.53.40	26.25. 6 25.54. 4	31. 2	26. 9.33
Maj. 15		48616 47512	25.55.53 25.24.47	25.56.19 25.25.10	31. 9	25.40.44
Maj. 16	pallido	48102 47090	25.41.37 25.12.57	25.42. 1 25.13.20	28.41	25.27.41
Maj. 23	clarissimo	44933 43869	24.11.45 23.41.12	24.12. 7 23.41.33	30.34	23.56.50
Maj. 24	pallido	44496 43476	23.59.14 23.29.51	23.59.36 23.30.12	29.24	23.44.54
Maj. 27	clarissimo	43417 42373	23.28. 9 22.57.49	23.28.30 22.58.10	30.20	23.13.20
Maj. 31	claro	42123 41088	22.50.32 22.20.12	22.50.53 22.20.32	30.21	22.35.42
Jun. 1		41845 40789	22.42.23 22.11.23	22.42.44 22.11.43	31. 1	22.27.13
Jul. 2	clarissimo. Deinceps ad diem 25 Julii 1708 ut pluri mum observabat Gabriel, in terdum & Heraclitus Man fredii fratres	39665 38647	21.38. 9 21. 7.48	21.38.29 21. 8. 7	30.22	21.23.18
Jul. 19	clarissimo	44081 43031	23.47.18 23.16.58	23.47.40 23.17.19	30.21	23.32.29

Jul.

		Tangen tes corre ctæ ap numbra	Diff. a vertice apparent limborum		Diff. a vertice vera lim borum		Diam. app. Solis	Diff. a vertice vera cen tri	
			G	I II	G	I II		I II	G I II
1706									
Jul. 25	ut antea	46574 45491	24.58.24	24.58.47	24.58.47	24.28. 3	30.44	24.43.25	
Jul. 26	ut antea	47022 45951	25.11. 2	25.11.25	25.11.25	24.41. 8	30.17	24.56.16	
Jul. 28	ut antea	47994 46899	25.38.17	25.38.41	25.38.41	25. 7.57	30.44	25.23.19	
Aug. 22		64510 63238	32.49.34	32.50. 7	32.50. 7	32.19. 3	31. 4	32.34.55	
Aug. 23	Sole pallido	65338 64073	33. 9.35	33.10. 8	33.10. 8	32.39.28	30.40	32.54.48	
Aug. 29	pallido	70678 69302	35.15. 7	35.15.42	35.15.42	34.43.57	31.45	34.59.49	
Aug. 31	clarissimo	72571 71197	35.58. 8	35.58.45	35.58.45	35.27.35	31.10	35.43.10	
Sept. 1	claro	73546 72159	36.19.59	36.20.37	36.20.37	35.49.27	31.10	36. 5. 2	
Sept. 4	pallido	76534 75122	37.25.42	37.26.22	37.26.22	36.55.31	30.51	37.10.56	
Sept. 5	clarissimo	77573 76131	37.48. 7	37.48.47	37.48.47	37.17.35	31.12	37.33.21	
Sept. 6	ut antea	78619 77168	38.10.27	38.11. 8	38.11. 8	37.40. 4	31. 4	37.55.36	
Sept. 10	claro	82955 81447	39.40.39	39.41.22	39.41.22	39.10.25	30.57	39.25.53	
Sept. 13	Sole clarissimo	86394 84816	40.49.31	40.50.16	40.50.16	40.18.56	31.10	40.34.36	
Sept. 14	ut antea	87562 85972	41.12.22	41.13. 8	41.13. 8	40.41.56	31.12	40.57.32	
Sept. 25	pallidissimo	88742 87153	41.35.13	41.36. 0	41.36. 0	41. 5.10	30.50	41.20.35	

Sept.

1706		Tangen- tes cor- re B & a pr- numbra	Dist. a vertice apparens limborum			Dist. a vertice vera lim- borum			Diam. app. Solis			Dist. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
Sept. 20	clarissimo	95004 93287	43.31.57 43. 0.40			43.32.47 43. 1.29			31.18			43.17.	8	
Sept. 21	pallidissimo	96297 94568	43.55.10 43.24. 3			43.56. 1 43.24.53			31. 8			43.40.27		
Sept. 25	claro	101720 99860	45.29.18 44.57.35			45.30.11 44.58.27			31.44			45.14.19		
Oct. 8	Sole pallidissimo	121459 119245	50.32. 4 50. 0.59			50.33. 8 50. 2. 2			31. 6			50.17.55		
Oct. 11	clarissimo	126540 124188	51.40.55 51. 9.29			51.42. 1 51.10.33			31.28			51.26.17		
Oct. 12	ut antea	128288 125883	52. 3.49 51.32.13			52. 4.56 51.33.19			31.37			51.49. 7		
Oct. 17	ut antea	137269 134657	53.55.36 53.24. 7			53.56.48 53.25.17			31.31			53.41. 2		
Oct. 31	ut antea	165150 161806	58.48.17 58.16.59			58.49.46 58.18.26			31.20			58.34. 6		
Nov. 14	Sole claro	195838 191648	62.57. 0 62.26.41			62.58.46 62.28.25			30.21			62.43.35		
Nov. 17	claro	202446 197816	63.42.45 63.10.57			63.44.35 63.12.44			31.31			63.28.39		
Nov. 24	pallido	217277 212070	65.17.10 64.45.15			65.19. 9 64.47.10			31.59			65. 3. 9		
Dec. 2	clarissimo	232222 226407	66.42. 8 66.10.11			66.44.15 66.12.15			32. 0			66.28.15		
Dec. 3	pallidissimo	233858 227920	66.50.52 66.18.38			66.53. 0 66.20.43			32.17			66.36.51		
Dec. 5	clarissimo	236963 230919	67. 7.12 66.35. 6			67. 9.22 66.37.12			32.10			66.53.17		
Dec. 6	ut antea	238359 232307	67.14.40 66.42.35			67.16.51 66.44.42			32. 9			67. 0.46		

Dec.

		Langen- tes corre- ctæ ap- numbra	Dif- a vertice apparens limborum	Dif- a vertice vera lim- borum	Diam. app. Solis	Dif- a vertice vera cen- tri
			G I I'	G I II	I II	G I II
1706						
Dec. 7	ut antea	239 742 233608	67.21.30 66.49.33	67.23.41 66.51.41	32. 0	67. 7.4
Dec. 8	claro	241055 234844	67.28. 9 66.56. 6	67.30.21 66.58.15	32. 6	67.14.18
Dec. 15	pallido	247864 241269	68. 1.43 67.29.14	68. 3.59 67.31.27	32.32	67.47.43
Dec. 19	clarissimo	249686 243083	68.10.25 67.38.19	68.12.42 67.40.32	32.10	67.56.37
Dec. 20	clarissimo	249934 243285	68.11.36 67.39.19	68.13.53 67.41.33	32.20	67.57.43
Dec. 29	pallido	247626 241066	68. 0.33 67.28.12	68. 2.49 67.30.24	32.25	67.46.36
Dec. 30	pallidissimo	246710 240168	67.56. 8 67.23.40	67.58.24 67.25.52	32.32	67.42. 8
Dec. 31	clarissimo	245854 239405	67.51.58 67.19.47	67.54.13 67.21.58	32.15	67.38. 5
1707						
Jan. 6	Sole claro	238970 232837	67.17.33 66.45.26	67.19.44 66.47.33	32.11	67. 3.38
Jan. 19	pallido	215976 210847	65. 9.18 64.37.34	65.11.16 64.39.29	31.47	64.55.22
Jan. 29	pallido	194360 189956	62.46.25 62.14. 9	62.48.10 62.15.52	32.18	62.32. 1
Feb. 4	clarissimo	180980 177061	61. 4.38 60.32.35	61. 6.16 60.34.11	32. 5	60.50.14
Feb. 8	ut antea	172124 168526	59.50.35 59.18.57	59.52. 8 59.20.28	31.40	59.36.18
Feb. 9	pallido	169977 166436	59.31.52 59. 0. 4	59.33.24 59. 1.34	31.50	59.17.29

Feb.

1707		Tangen- tes cor- re ap- penbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis	Diff. a vertice vera cen- tri	
			G	I II	G	I II		G	I II
Feb. 19	clarissimo	149085 146141	56. 8.52	55.37. 3	56.10.11	55.38.20	31.51	55.54.25	
Feb. 21	claro	145129 142319	55.25.53	54.54.22	55.27.10	54.55.37	31.33	55.11.24	
Feb. 24	claro	139409 136718	54.20.52	53.49. 1	54.22. 5	53.50.12	31.53	54. 6. 8	
Feb. 25	clarissimo	137519 134879	53.58.35	53.26.48	53.59.47	53.27.58	31.49	53.43.52	
Feb. 26	ut antea	135662 133062	53.36.18	53. 4.27	53.37.29	53. 5.37	31.52	53.21.33	
Feb. 28	ut antea	132009 129493	52.51.19	52.19.38	52.52.29	52.20.48	31.41	52.36.58	
Mar. 12	ut antea	111923 109880	48.13.17	47.41.42	48.14.15	47.42.39	31.36	47.58.27	
Mar. 13	ut antea	110413 108382	47.50. 0	47.18.12	47.50.57	47.19. 9	31.48	47.35. 3	
Mar. 24	pallido	94856 93139	43.29.16	42.57.56	43.30. 6	42.58.45	31.21	43.14.25	
Mar. 26	ut antea	92279 90620	42.42. 2	42.10.59	42.42.50	42.11.46	31. 4	42.27.18	
Mar. 27	clarissimo	91034 89383	42.18.46	41.47.29	42.19.34	41.48.16	31.18	42. 3.55	
Mar. 29	ut antea	88579 86958	41.32. 3	41. 0.34	41.32.50	41. 1.20	31.30	41.17. 5	
Mar. 30	ut antea	87376 85776	41. 8.45	40.37.18	41. 9.31	40.38. 3	31.28	40.53.47	
Apr. 4	claro	81611 80109	39.13. 6	38.41.52	39.13.49	38.42.34	31.15	38.58.12	
Apr. 16	clarissimo. Nocte seq. tan- gentes Lunæ in meridiana in- correctæ 143198, 140546	69458 68128	34.46.59	34.15.57	34.47.34	34.16.32	31. 2	34.32. 3	

Apr.

		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
1707						
Apr. 17	pallidissimo	68531 67231	34.25.24 33.54.49	34.25.59 33.55.24	30.35	34.10.41
Apr. 24	Sole clarissimo	62571 61322	32. 2. 4 31.31. 3	32. 2.36 31.31.31	31. 2	31.47. 5
Apr. 25	ut antea	61778 60534	31.42.25 31.11.18	31.42.56 31.11.48	31. 8	31.27.22
Apr. 27	ut antea	60229 58998	31. 3.36 30.32.23	31. 4. 6 30.32.52	31.14	30.48.29
Maj. 15	Sole pallido	48740 47628	25.59. 5 25.28. 4	25.59.29 25.28.28	31. 2	25.43.58
Maj. 22	Sole clarissimo	45453 44373	24.26.36 23.55.43	24.26.51 23.56. 1	30.53	23.11.31
Maj. 24	pallidissimo	44622 43567	24. 2.52 23.32.29	24. 3.14 23.32.50	30.24	23.48. 2
Jun. 3	clarissimo	41357 40309	22.28. 7 21.57.14	22.28.27 21.57.34	30.53	22.13. 0
Jun. 9	ut antea	40056 39016	21.49.45 21.18.51	21.50. 5 21.19.10	30.55	21.34.37
Jun. 10	ut antea	39890 38852	21.44.51 21.13.56	21.45.11 21.14.15	30.56	21.29.43
Jun. 13	ut antea	39464 38414	21.32.22 21. 0.50	21.32.32 21. 1. 9	31.23	21.16.50
Jun. 14	ut antea	39348 38306	21.28.34 20.57.36	21.28.53 20.57.55	30.58	21.13.24
Jun. 19	pallido	38978 37942	21.17.42 20.46.40	21.18. 1 20.46.59	31. 2	21. 2.30
Jun. 22	claro	38924 37880	21.16. 6 20.44.49	21.16.25 20.45. 8	31.17	21. 0.46
Jun. 25	clarissimo	38991 37959	21.18. 6 20.47.11	21.18.25 20.47.30	30.55	21. 2.57

P p

Jun.

1707		Tangen tes cor- dæ a pe- numbra	Diff. a vertice apparent limborum			Diff. a vertice vera lim- borum			Diam. app. Solis	Diff. a vertice vera cen- tri		
			G	I	II	G	I	II		I	II	III
Jun. 26	ut antea	39048 38008	21.19.46			21.20. 5			34. 6			
			20.45.40			20.45.59						
Jun. 29	ut antea	39275 38249	21.26.33			21.26.52			30.39	21.11.33		
			20.55.54			20.56.13						
Jun. 30	ut antea	39387 38353	21.29.53			21.30.12			30.53	21.14.45		
			20.59. 0			20.59.19						
Jul. 2	ut antea	39642 38608	21.37.28			21.37.48			30.51	21.22.22		
			21. 6.38			21. 6.57						
Jul. 3	ut antea	39783 38745	21.41.40			21.42. 0			30.55	21.26.32		
			21.10.46			21.11. 5						
Jul. 4	claro	39950 38914	21.46.37			21.46.57			30.50	21.31.32		
			21.15.48			21.16. 7						
Jul. 7	clarissimo	40521 39480	22. 3.30			22. 3.50			30.50	21.48.25		
			21.32.40			21.33. 0						
Jul. 9	ut antea	40956 39922	22.16.20			22.16.40			30.34	22. 1.23		
			21.45.46			21.46. 6						
Jul. 10	ut antea	41206 40157	22.23.41			22.24. 1			30.56	22. 8.33		
			21.52.45			21.53. 5						
Jul. 11	ut antea	41733 40683	22.39. 9			22.39.30			30.52	22.24. 4		
			22. 8.18			22. 8.38						
Jul. 16	ut antea	42950 41886	23.14.36			23.14.57			30.59	22.59.27		
			22.43.37			22.43.58						
Jul. 22	ut antea	45175 44097	24.18.41			24.19. 3			30.56	24. 3.35		
			23.47.46			23.48. 7						
Jul. 25	ut antea	46472 45369	24.55.30			24.55.53			32.19	24.40.18		
			24.24.12			24.24.34						
Jul. 27	ut antea	47390 46293	25.21.23			25.21.46			30.55	25. 6.18		
			24.50.28			24.50.51						
Jul. 28	claro	47873 46785	25.34.55			25.35.19			30.34	25.20. 2		
			25. 4.22			25. 4.45						

Jul.

		Tangen tes cor- re æ æ numbra	Diff. a vertice apparenti limborum		Diff. a vertice vera lim borum		Diam. app. Solis	Diff. a vertice vera cen- tri	
			G	I II	G	I II		I II	I II
1707									
Jul. 19	clarissimo	48374 47274	25.48.55 25.18. 7		25.49.19 25.18.30		30.49	25.33.54	
Aug. 4	Sole clarissimo	51634 50505	27.18.33 26.47.47		27.18.59 26.48. 3		30.56	27. 3.31	
Aug. 9	ut antea	54720 53563	28.41.16 28.10.30		28.41.44 28.10.57		30.47	28.26.21	
Aug. 14	ut antea	58141 56933	30.10.28 29.39.16		30.10.57 29.39.45		31.12	29.55.21	
Aug. 24	ut antea	65997 64697	33.25.26 32.54. 7		33.26. 1 32.54.40		31.21	33.10.20	
Aug. 27	pallido	68626 67314	34.27.38 33.56.47		34.28.13 33.57. 2		31.11	34.12.37	
Sept. 7	clarissimo	79428 77956	38.27.34 37.56.19		38.28.16 37.57. 0		31.16	38.12.38	
Sept. 8	ut antea	80500 79013	38.50. 2 38.18.49		38.50.45 38.19.30		31.15	38.35. 7	
Sept. 9	ut antea	81591 80089	39.12.41 38.41.28		39.13.24 38.42.11		31.13	38.57.47	
Sept. 18	ut antea	92148 90476	42.39.37 42. 8.16		42.40.25 42. 9. 3		31.22	42.24.44	
Sept. 19	ut antea	93414 91715	43. 3. 0 42.31.32		43. 3.49 42.32.20		31.29	42.48. 4	
Sept. 22	ut antea	97314 95552	44.13.13 43.41.52		44.14. 4 43.42.42		31.22	43.58.23	
Sept. 23	ut antea	99659 96867	44.36.49 44. 5.18		44.37.41 44. 6. 9		31.32	44.21.55	
Sept. 26	ut antea	102784 100921	45.47.12 45.15.46		45.48. 5 45.16.38		31.27	45.32.21	
Sept. 29	pallidissimo	107104 105149	46.57.53 46.26.17		46.58.49 46.27. 2		31.47	46.42.55	

		Tangen tes cor- ræ a p- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app- Solis	Diff. a vertice vera cen- t. l
		G	I	II	I	II
1707						
Oct. 6	ut antea	117813 115679	49.40.32 49. 9.29	49.41.33 49.10.29	31. 4	49.26. 1
Oct. 11	clarissimo	126147 123794	51.35.43 51. 4. 8	51.36.49 51. 5.12	31.37	51.21. 0
Nov. 5	clarissimo	175391 171689	60.18.37 59.46.53	60.20.12 59.48.26	31.46	60. 4.21
Nov. 6	ut antea	177593 173795	60.37. 0 60. 5. 3	60.38.16 60. 6.17	31.59	60.22.36
Nov. 12		190841 186616	62.20.45 61.48.54	62.22.27 61.50.34	31.53	62. 6.29
Dec. 2	Sole claro	231786 225116	66.39.47 66. 2.53	66.41.54 66. 4.58	36.56	
Dec. 7	clarissimo	239427 233289	67.19.53 66.47.51	67.22. 4 66.49.58	32. 6	67. 6. 1
Dec. 11	ut antea	244194 237860	67.43.49 67.11.51	67.46. 3 67.14. 1	32. 2	67.30. 2
Dec. 21	ut antea	249988 243383	68.11.52 67.39.49	68.14. 7 67.42. 2	32. 5	67.58. 4
1708						
Jan. 13	Sole pallido	228109 222462	66.19.40 65.47.43	66.21.45 65.49.45	32. 0	66. 5.45
Jan. 18	claro	218540 213295	65.24.43 64.52.52	65.26.36 64.54.48	31.48	65.10.42
Jan. 23	Sole claro	208097 203208	64.20. 1 63.47.32	64.21.54 63.49.41	32.55	64. 5.47
Jan. 31	clarissimo	190427 186187	62.17.45 61.45.36	62.19.28 61.47.18	32.10	62. 3.23
Feb. 10	ut antea	168345 164843	59.17.20 58.45.27	59.18.51 58.46.56	31.55	59. 2.53

Feb.

1708		Tangen tes corvæ E. & a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G I II	G I II	I II	G I II	
Feb. 11	claro	166182 162783	58.57.45 58.26.13	58.59.15 58.27.41	31.34	58.43.28
Feb. 23	pallido	141754 139050	54.47.57 54.16.36	54.49.11 54.17.49	31.22	54.33.30
Feb. 24	claro	139764 137245	54.25.0 53.55.19	54.26.13 53.56.21	29.42	54.11.22
Feb. 25	clarissimo	137959 135330	54.3.44 53.32.17	54.4.56 53.33.28	31.28	53.49.12
Mar. 14	Sole claro	107740 105786	47.8.0 46.36.38	47.8.56 46.37.33	31.23	46.53.14
Mar. 16	ut antea	104821 102907	46.20.55 45.49.15	46.21.40 45.50.9	31.31	46.21.54
Mar. 17	clarissimo	103490 101500	45.58.57 45.25.36	45.59.41 45.27.29	32.12	45.43.35
Mar. 23	ut antea	95175 93442	43.35.2 43.3.30	43.35.52 43.4.19	31.33	43.20.5
Maj. 22	Sole claro	45135 44127	24.17.31 23.48.38	24.17.53 23.49.0	28.33	24.3.26
Jul. 25	clarissimo. Per hoc tempus observationes habebat Anto nius Leprotus postmodum Archiatr Pontificius	46813 45705	25.5.9 24.33.46	25.5.32 24.34.9	31.23	24.49.50
Jul. 26	claro	47255 46173	25.17.35 24.47.3	25.17.58 24.47.26	30.2	25.2.42
Jul. 27	clarissimo	47764 46651	25.31.51 25.0.34	25.32.15 25.0.57	31.18	25.16.36
Jul. 28	ut antea	48262 47151	25.45.47 25.14.39	25.46.11 25.15.2	31.9	25.30.36
Jul. 29	clarissimo	48779 47638	26.0.10 25.28.20	26.0.34 25.28.43	31.51	25.44.38

Jul.

1708		Tangen- tes cor- dæ a pe- numbra	Dist. a vertice apparens limborum			Dist. a vertice vera lim- borum			Diam. app. Solis		Dist. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	G	I	II
Jul. 30	ut antea	49276 48166	26.13.57	25.43.5		26.14.21	25.43.29		30.52		25.58.55		
Jul. 31	ut antea	49837 48700	26.29.25	25.17.58		26.29.50	25.58.23		31.27		26.14.6		
Aug. 1	ut antea	50360 49237	26.43.46	26.12.51		26.44.11	26.13.15		30.56		26.22.43		
Aug. 2	ut antea	50924 49787	26.59.12	26.28.1		26.59.38	26.28.26		31.12		26.44.2		
Aug. 3	nebuloso	51499 50363	27.14.53	26.43.53		27.15.19	26.44.18		31.1		26.59.48		
Aug. 5	Sole claro, cælo nubilo	52680 51536	27.46.50	27.15.53		27.47.17	27.16.19		30.58		27.31.48		
Aug. 7	clarissimo	53859 52756	28.18.24	27.48.51		28.18.52	27.49.18		29.34		28.4.5		
Aug. 8	ut antea	54555 53392	28.36.53	28.5.55		28.37.20	28.6.22		30.58		28.21.51		
Aug. 10	ut antea	55880 54700	29.11.47	28.40.43		29.12.15	28.41.11		31.4		28.56.43		
Aug. 11	Sole clarissimo	56553 55375	29.29.22	28.58.33		29.29.50	28.59.0		30.50		29.14.25		
Aug. 12	ut antea	57267 56070	29.47.55	29.16.45		29.48.23	29.17.13		31.10		29.32.48		
Aug. 16	ut antea	60162 58938	31.1.55	30.30.51		31.2.25	30.31.20		31.5		30.46.52		
Aug. 17	ut antea	60928 59689	31.21.12	30.49.57		31.21.41	30.50.26		31.16		31.6.4		
Aug. 18	nubilo	61706 60484	31.40.37	31.10.2		31.41.8	31.10.32		30.36		31.25.50		
Aug. 19	clarissimo	62516 61273	32.0.43	31.29.49		32.1.15	31.30.20		30.55		31.45.47		

Aug.

1708		Tangen tes cor de a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
Aug. 20	ut antea	63298 62025	32.20. 0 31.48.33	32.20.32 31.49. 4	31.28	32. 4.48
Aug. 21	ut antea	64116 62837	32.40. 0 32. 8.38	32.40.33 32. 9.10	31.23	32.24.51
Aug. 22	ut antea	64935 63655	32.59.51 32.28.43	33. 0.24 32.29.15	31. 9	32.44.49
Aug. 23	ut antea	65783 64489	33.20.17 32.49. 3	33.20.51 32.49.36	31.15	33. 5.13
Aug. 26	ut antea	68413 67079	34.22.37 33.51.11	34.23.12 33.51.46	31.26	34. 7.29
Aug. 27	ut antea	69315 67967	34.43.39 34.12. 9	34.44.14 34.12.44	31.30	34.28.29
Aug. 30	claro, czło nubilo	72122 70732	35.48. 0 35.16.21	35.48.37 35.16.57	31.40	35.32.47
Aug. 31	clarissimo	73081 71691	36. 9.34 35.38.13	36.10.11 35.38.49	31.22	35.54.30
Sept. 2	ut antea	75062 73630	36.53.33 36.21.51	36.54.12 36.22.29	31.43	36.38.20
Sept. 3	ut antea	76065 74624	37.15.30 36.43.54	37.16.10 36.44.32	31.38	37. 0.21
Sept. 6	ut antea	79163 77685	38.21.58 37.50.30	38.22.40 37.51.11	31.29	38. 6.55
Sept. 7	ut antea	80230 78750	38.44.24 38.13.13	38.45. 6 38.13.55	31.11	38.29.30
Sept. 8	ut antea	81326 79812	39. 7.12 38.35.38	39. 7.55 38.36.20	31.35	38.52. 7
Sept. 10	ut antea	84680 83132	40.15.28 39.44.14	40.16.13 39.44.58	31.15	40. 0.35
Sept. 15	Sole claro, czło nubilo	89393 87758	41.47.40 41.16.10	41.48.27 41.16.57	31.50	41.32.42

Sept.

1708		Tangen tes cor- re & ap- numbra	Diff. a vertice apparentis limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G I II	G I II	I II	G I II	
Sept. 16	nubilo	90588 88965	42.10.22 41.39.28	42.11.10 41.40.15	30.55	41.55.42
Sept. 17	Sole claro, cælo nubilo	91854 90178	42.34. 7 42. 2.36	42.34.55 42. 3.23	31.32	42.19. 9
Sept. 22	ut antea	98322 96545	44.30.54 43.59.34	44.31.46 44. 0.25	31.21	44.16. 5
Sept. 23	ut antea	99672 97881	44.54.21 44.23.11	44.55.13 44.24. 2	31.11	44.39.37
Sept. 28	clarissimo	106729 104766	46.51.51 46.20. 0	46.52.47 46.20.55	31.52	46.36.51
Sept. 30		109655 107696	47.38.12 47. 7.19	47.39. 6 47. 8.12	30.54	47.23.39
Oct. 10		125711 123377	51.29.55 50.58.27	51.31. 1 50.59.31	31.30	51.15.16
Oct. 14		132725 130220	53. 0.15 52.28.41	53. 1.25 52.29.49	31.36	52.45.37
Oct. 16		136372 133768	53.44.52 53.13.10	53.46. 3 53.14.20	31.43	53.30.11
Oct. 18		140102 137403	54.28.55 53.57.12	54.30. 8 53.58.24	31.44	54.14.16
Oct. 20		143831 141137	55.11.27 54.40.52	55.12.43 54.42. 6	30.37	54.57.24
Nov. 1		168364 164905	59.17.30 58.46. 1	59.19. 1 58.47.30	31.31	59. 3.15
Nov. 2		170503 166964	59.36.30 59. 4.52	59.38. 2 59. 6.22	31.40	59.22.12
1709						
Mar. 28	nubilo. Ego	89166 87516	41.43.19 41.11.28	41.44. 5 41.12.14	31.51	41.28. 9

Mat.

		Tangen tes cor- re- ctæ a pe- numbra	Diff. a vertice apparentis limborum		Diff. a vertice vera lim- borum		Diam. app. Solis		Diff. a vertice vera cen- tri	
			G	I II	G	I II	I II		G	I II
1709										
Mar. 30	clarissimo Sole	86738 85167	40.56.16	40.25.13	40.57.2	40.25.58	31.4		40.41.30	
Apr. 1	ut antea	84427 82834	40.10.24	39.38.11	40.11.8	39.38.55	32.13		39.55.1	
Apr. 5	nubilo	79881 78456	38.37.5	38.6.59	38.37.47	38.7.40	30.7		38.22.43	
Apr. 6	clarissimo	78875 77401	38.15.53	37.44.25	38.16.34	37.45.5	31.29		38.0.49	
Apr. 12	specie languida	72754 71380	36.2.15	35.31.9	36.2.52	35.31.45	31.7		35.47.18	
Maj. 2	Sole clarissimo	56222 55040	29.22.5	28.49.42	29.22.31	28.50.9	32.22		29.6.20	
Maj. 3	nubilo	55546 54350	29.3.1	28.31.27	29.3.29	28.31.55	31.34		28.47.42	
Maj. 5	ut antea	54235 53075	28.28.24	27.57.26	28.28.51	27.57.53	30.58		28.13.22	
Maj. 6	ut antea	53578 52430	28.10.54	27.40.6	28.11.21	27.40.33	30.48		27.55.57	
Maj. 9	Sole languido	51771 50623	27.22.19	26.51.0	27.22.45	26.51.25	31.20		27.7.5	
Maj. 10	claro	51193 50036	27.6.34	26.34.55	27.7.0	26.35.20	31.40		26.51.10	
Maj. 11	ut antea	50622 49465	26.50.50	26.19.10	26.51.15	26.19.34	31.41		26.35.24	
Maj. 14	ut antea	48998 47853	26.6.15	25.34.22	26.6.39	25.34.45	31.54		25.50.42	
Maj. 19	Sole claro	46541 45431	24.57.29	24.25.58	24.57.52	24.26.20	31.32		24.42.6	
Maj. 21	Sole languido	45656 44556	24.32.23	24.0.58	24.32.46	24.1.20	31.26		24.17.3	

Q9

Maj.

1709		Tangen tes cor- re q. a pe numbra	Diff. a vertice appareus limborum			Diff. a vertice vera lim borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
Maj. 22	ut antea	45212 44121	24	19.45		24.20.7			31.17			24.4.28		
Maj. 25	Sole languido	44052 42965	23.46.29			23.46.51			31.26			23.31.8		
Maj. 26	Sole claro	43687 42598	23.35.58			23.36.20			31.34			23.20.33		
Maj. 29	ut antea	42666 41581	23.6.22			23.6.43			31.41			22.50.52		
Jun. 5	ut antea	40753 39698	22.10.21			22.10.41			31.12			21.55.5		
Jul. 9	Sole languido	39968 38911	21.47.9			21.47.29			31.27			21.32.45		
Jun. 10	ut antea	38817 38750	21.42.41			21.43.1			31.46			21.27.8		
Jun. 13	ut antea	39398 38344	21.30.13			21.30.33			31.30			21.14.48		
Jun. 14	claro	39292 38233	21.27.4			21.27.24			31.50			21.11.29		
Jun. 15	languido	39196 38145	21.24.12			21.24.32			31.26			21.8.49		
Jun. 16	valde nubilo	39103 38071	21.21.16			21.21.36			30.45			21.6.13		
Jun. 18	languido	38998 37946	21.18.18			21.18.37			31.30			21.2.52		
Jun. 24	nubilo	38966 37913	21.17.21			21.17.40			31.32			21.1.54		
Jun. 28	ut antea	39240 38180	21.25.31			21.25.51			31.43			21.9.59		
Jun. 29	claro	39323 38287	21.28.18			21.28.38			31.17			21.12.59		

Jun.

		Tangen tes cor- re æ a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
1709						
Jun. 30	claro	39449 38391	21.31.44 21. 0. 9	21.31. 4 21. 0.28	31.36	21.16.16
Jul. 1	ut antea	39575 38534	21.35.29 21. 4.26	21.35.49 21. 4.45	31. 4	21.20.17
Jul. 2	ut antea	39724 38668	21.39.55 21. 8.26	21.40.15 21. 8.45	31.30	21.24.30
Jul. 3	ut antea	39874 38823	21.44.22 21.13. 5	21.44.42 21.13.24	31.18	21.29. 3
Jul. 6	ut antea	40421 39361	22. 0.34 21.29. 7	22. 0.54 21.29.27	31.27	21.45.10
Jul. 7	ut antea	40629 39576	22. 6.42 21.35.31	22. 7. 2 21.35.51	31.13	21.51.26
Jul. 13	Sole languido	42162 41093	22.51.41 22.20.23	22.52. 2 22.20.43	31.29	22.36.22
Jul. 14	Sole claro	42469 41396	23. 0.40 22.29.16	23. 1. 1 22.29.36	31.25	22.45.18
Jul. 15	ut antea	42797 41722	23.10.11 22.38.49	23.10.32 22.39. 9	31.23	22.54.50
Jul. 16	ut antea	43134 42053	23.19.58 22.48.30	23.20.19 22.48.51	31.28	23. 4.35
Jul. 18	Sole languido	43829 42745	23.40. 5 23. 8.21	23.40.25 23. 8.42	31.43	23.24.33
Jul. 21	languido	44972 43887	24.12.53 23.41.44	24.13.15 23.42. 6	31. 9	23.57.40
Jul. 22	Sole claro	45392 44298	24.25. 2 23.53.33	24.25.24 23.53.55	31.29	24. 9.39
Jul. 23	ut antea	45818 44716	24.37. 0 24. 5.33	24.37.23 24. 5.55	31.28	24.21.39
Jul. 25	ut antea	46701 45600	25. 2. 0 24.30.48	25. 2.23 24.31.10	31.13	24.46.46

Qq 2

Jul.

1709		Tangen tes cor- re- ctæ ap- pe- numbra	Diff. a veritice apparens limborum.	Diff. a veritice vera lim- borum	Diur. app. solis	Diff. a veritice vera cen- tri
			G I II	G I II	I II	G I II
Jul. 27	clarissimo	47636 46527	25.28.17 24.57.5	25.28.40 24.57.28	31.12	25.13.4
Jul. 28	ut antea	48141 47028	25.42.25 25.11.13	25.42.49 25.11.36	31.13	25.27.12
Jul. 29	ut antea	48635 47510	25.55.52 25.24.45	25.56.16 25.25.8	31.8	25.40.42
Aug. 1	ut antea	50227 49095	26.40.10 26.8.17	26.40.35 26.9.21	31.14	26.24.58
Aug. 2	claro	50782 49650	26.55.21 26.24.17	26.55.47 26.24.42	31.5	26.40.14
Aug. 3	clarissimo	51353 50212	27.10.55 26.39.45	27.11.21 26.40.11	31.10	26.55.46
Aug. 4	ut antea	51936 50791	27.26.15 26.55.36	27.26.41 26.56.1	30.40	27.11.21
Aug. 8	ut antea	54408 53234	28.33.0 28.1.42	28.33.28 28.2.9	31.19	28.17.48
Aug. 9	ut antea	55057 53872	28.50.9 28.18.45	28.50.37 28.19.12	31.25	28.34.54
Aug. 10	ut antea	55718 54536	29.7.33 28.36.24	29.8.1 28.36.52	31.9	28.52.26
Aug. 11	ut antea	56399 55207	29.25.22 28.54.8	29.25.50 28.54.56	31.14	29.10.13
Aug. 12	ut antea	57091 55889	29.43.22 29.12.2	29.43.51 29.12.30	31.21	29.28.10
Aug. 13	ut antea	57795 56583	30.1.4 29.30.9	30.1.33 29.30.37	30.56	29.46.5
Aug. 14	claro	58519 57293	30.10.9 29.48.35	30.10.38 29.49.4	31.34	30.4.51
Aug. 15	clarissimo	59235 58015	30.38.26 30.7.14	30.38.56 30.7.43	31.13	30.23.19

Aug.

		Tangen tes cor dæ a pe numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim borum		Diam. app. Solis		Diff. a vertice vera cen tri	
			G	I II	G	I II	I II		G	I II
1709										
Aug. 16	ut antea	59984 58750	30.57.26 30.26. 4		30.57.51 30.26.34		31.22		30.42.15	
Aug. 20	ut antea	63104 61842	32.15.13 31.44. 1		32.15.45 31.44.32		31.13		32. 0. 8	
Nov. 19	Sole clarissimo	207344 202466	64.15. 9 63.42.53		64.17. 2 63.44.40		32.22		64. 0.51	
Nov. 20	ut antea	209471 204555	64.28.50 63.56.51		64.30.44 64.58.41		32. 3		64.14.42	
Nov. 21	Sole claro	211611 206607	64.42.22 64.10.21		64.44.17 64.12.13		32. 4		64.28.15	
Nov. 24	clarissimo	217791 212568	65.20.15 64.48.22		65.22.14 64.50.17		31.57		65. 6.15	
Dec. 1	Sole languido	230971 225192	66.35.22 66. 3.20		66.37.28 66. 5.23		32. 5		66.21.25	
Dec. 6	clarissimo	238751 232597	67.16.26 66.44. 9		67.18.37 66.46.16		32.21		67. 2.26	
Dec. 7	Sole clarissimo	240089 233897	67.23.16 66.51. 5		67.25.28 66.53.13		32.15		67. 9.20	
Dec. 11	Sole claro	244728 238345	67.46.27 67.14.21		67.48.41 67.16.31		32.10		67.32.36	
Dec. 12	Sole languido	245657 239226	67.51. 1 67.18.52		67.53.15 67.21. 3		32.12		67.37. 9	
Dec. 19	clarissimo	249750 243096	68.10.30 67.38.23		68.12.47 67.40.36		32.11		67.56.41	
Dec. 26	languido	248972 242390	68. 7. 1 67.34.51		68. 9.17 67.37. 4		32.13		67.53.10	
Dec. 27	Sole claro	248486 241913	68. 4.42 67.32.28		68. 6.58 67.34.41		32.17		67.50.49	
Dec. 29	clarissimo	247188 240698	67.58.27 67.26.21		68. 0.43 67.28.33		32.10		67.44.38	

Dec.

		Tangen tes corre ctæ ap- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	II	I	II
1709						
Dec. 30	claro	246433 239954	67.54.54 67.22.35	67.57. 9 67.24.47	32.22	67.40.58
Dec. 31	ut antea	245566 239077	67.50.34 67.18. 6	67.52.49 67.20.17	32.22	67.36.33
1710						
Jan. 1	Sole clarissimo. Hoc anno, & deinceps ad annum 1714 observationes a me rogatus habebat Jul. Cæsar Parisius cum focis	244590 238197	67.45.47 67.13.35	67.48. 2 67.15.46	32.16	67.31.54
Jan. 2	ut antea	243541 237193	67.40.36 67. 8.24	67.42.50 67.10.34	32.16	67.26.42
Jan. 3	claro	242399 236140	67.34.54 67. 2.54	67.37. 7 67. 5. 3	32. 4	67.21. 5
Jan. 4	ut antea	241200 235032	67.28.53 66.57. 5	67.31. 5 66.59.14	31.51	67.15. 9
Jan. 6	languido	238550 232429	67.15.24 66.43.15	67.17.55 66.45.22	32.13	67. 1.28
Jan. 7	ut antea	237113 231070	67. 7.59 66.35.55	67.10. 9 66.38. 1	32. 8	66.54. 5
Jan. 12	clarissimo	228962 223242	66.24.24 65.52.13	66.26.29 65.54.15	32.14	66.10.22
Jan. 15	ut antea	223417 217903	65.53.13 65.20.55	65.55.15 65.22.54	32.21	65.39. 4
Jan. 23	ut antea	206935 202085	64.12.49 63.40.19	64.14.41 63.42. 8	32.33	63.58.24
Jan. 26	ut antea	200367 195741	63.28.57 62.56.19	63.30.25 62.58. 5	32.20	63.14.15
Jan. 29	claro	193707 189360	62.41.43 62. 9.42	62.43.28 62.11.25	32. 3	62.27.26

Jan.

1710		Tangen tes cor re & a p numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G	I	II	I	II
Jan. 30	clarissimo	191459 187184	62.25.18 61.53.15	62.26.2 61.53.57	32.5	62.9.59
Feb. 1	ut antea	187016 182872	61.52.57 61.19.44	61.53.38 61.21.24	32.14	61.37.31
Feb. 5	ut antea	178127 174273	60.42.24 60.9.8	60.43.1 66.10.47	32.18	60.26.52
Feb. 7	ut antea	173708 169998	60.4.19 59.32.3	60.5.53 59.33.55	32.18	59.49.44
Feb. 8	ut antea	171518 167911	59.45.24 59.13.26	59.46.57 59.14.57	32.0	59.30.57
Mar. 9	Sole languido	116204 114034	49.17.11 48.45.5	49.18.12 48.46.5	32.7	49.2.8
Mar. 10	Sole claro	114613 112498	48.53.43 48.21.58	48.54.43 48.22.57	31.46	48.38.50
Mar. 11	ut antea	113046 110960	48.30.15 47.58.27	48.31.14 47.59.25	31.49	48.15.19
Mar. 13	Sole languido	109983 107951	47.43.19 47.11.25	47.44.17 47.12.22	31.55	47.28.19
Mar. 15	claro	106974 105007	46.55.47 46.23.57	46.56.43 46.24.52	31.51	46.40.47
Mar. 16	ut antea	105519 103564	46.32.18 46.0.11	46.33.13 46.1.5	32.8	46.17.9
Mar. 17	ut antea	104067 102162	46.8.30 45.36.46	46.9.24 45.37.39	31.45	45.53.31
Mar. 19	Sole clarissimo	101239 99378	45.21.10 44.49.10	45.22.3 44.50.2	32.1	45.6.2
Mar. 20	ut antea	99842 98032	44.57.17 44.25.50	44.58.9 44.26.41	31.28	44.42.25
Mar. 21	☉ ut antea. Suspecta	98534 96676	44.34.37 44.1.54	44.35.29 44.2.45	32.44	44.19.7

Mar.

1710		Tangen- tes cor- ræ a p- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	II	I	II
Mar. 22	ut antea	97141 95337	44.10. 9 43.37.58	44.11. 0 43.38.48	32.12	43.54.54
Mar. 23	ut antea	95818 94042	43.46.36 43.14.29	43.47.27 43.15.15	32. 8	43.31.23
Mar. 24	ut antea	94499 92739	43.22.48 42.50.53	43.23.37 42.51.22	32.15	43. 7.29
Mar. 26	Sole languido	91938 90250	42.35.42 41. 3.59	42.36.30 41. 4.46	31.44	42.20.38
Mar. 27	Sole clarissimo	90686 89009	42.12.13 41.40.19	42.13. 0 41.41. 6	31.54	41.57. 3
Mar. 28	Sole languido	89451 87796	41.48.47 41.16.55	41.49.34 41.17.41	31.53	41.33.37
Mar. 29	ut antea	88230 86619	41.25.19 40.53.56	41.26. 6 40.54.42	31.24	41.10.24
Mar. 31	ut antea	85858 84255	40.38.56 40. 6.57	40.39.41 40. 7.41	32. 0	40.23.41
Apr. 1	ut antea	84690 83121	40.15.41 39.44. 2	40.16.25 39.44.46	31.39	40. 0.35
Apr. 4	Sole clarissimo	81306 79794	39. 6.47 38.35.16	39. 7.31 38.35.59	31.32	38.51.45
Apr. 8	Sole claro	77026 75570	37.36.21 37. 4.43	37.37. 1 37. 5.22	31.39	37.21.11
Apr. 10	ut antea	74977 73550	36.51.41 36.20. 5	36.52.10 36.20.43	31.37	36.36.31
Apr. 11	Sole claro, cælo nubilo	73986 72553	36.28.46 35.57.43	36.29.24 35.58.20	31. 4	36.13.52
Apr. 12	Sole claro	72996 71591	36. 7.41 35.35.58	36. 8.18 35.36.34	31.44	35.52.26
Apr. 13	ut antea	71026 70633	35.45.50 35.14. 5	35.46.27 35.14.41	31.46	35.30.34

Apr.

1710		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Sollis	Diff. a vertice vera cen tri
		G I II	G I II	I II	G I II	
Apr. 14	ut antea	71078 69693	35.24.16 34.52.26	35.24.52 34.53. 1	31.51	35. 8.56
Apr. 17	Sole claro	68299 66959	34.19.58 33.48.21	34.20.33 33.48.55	31.38	34. 4.44
Apr. 18	Sole claro, cælo nubilo	67406 66078	33.58.57 33.27.22	33.59.32 33.27.56	31.36	33.43.44
Apr. 20	Sole claro	65665 64356	33.17.28 32.45.50	33.18. 1 32.46.22	31.39	33. 2.11
Apr. 21	Sole languido	64817 63508	32.57. 1 32.25. 9	32.57.34 32.25.41	31.53	32.41.37
Apr. 22	ut antea	63974 62695	32.36.32 32. 5. 9	32.37. 5 32. 5.41	31.24	32.21.23
Apr. 24	languido	62347 61090	31.56.33 31.25.15	31.57. 5 31.25.46	31.19	31.41.25
Maj. 4	Sole claro	55042 53859	28.49.46 28.18.24	28.50.14 28.18.52	31.22	28.34.33
Maj. 7	languido	53122 51938	27.58.58 27.26.48	27.59.25 27.27.15	32.10	27.43.20
Maj. 8	clarissimo	52520 51310	27.42.31 27.10.57	27.42.58 27.11.23	31.35	27.27.10
Maj. 9	ut antea	51912 50760	27.26. 6 26.54.45	27.26.32 26.55.11	31.21	27.10.51
Maj. 10	clarissimo	51338 50173	27.10.31 26.38.40	27.10.57 26.39. 5	31.52	26.55. 1
Maj. 11	ut antea	50758 49619	26.54.42 26.23.25	26.55. 8 26.23.50	31.18	26.39.29
Maj. 12	ut antea	50196 49064	26.39.18 26. 8. 5	26.39.43 26. 8.29	31.14	26.24. 6
Maj. 13	ut antea	49652 48518	26.24.20 25.52.55	26.24.45 25.53.19	31.26	26. 9. 2

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Maj.

1710		Tangen tes cor de a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G I II	G I II	I II	G I II	
Maj. 14	ut antea	49117 47992	26. 9.33 25.38.15	26. 9.57 25.38.39	31.18	25.54.18
Maj. 16	ut antea	48093 46983	25.41. 5 25. 9.57	25.41.29 25.10.20	31. 9	25.25.54
Maj. 17	languido	47603 46490	25.27.22 24.56. 1	25.27.45 24.56.24	31.21	25.12. 4
Maj. 21	languido	45711 44600	24.35.39 24. 3.21	24.36. 2 24. 3.43	31.19	24.19.52
Maj. 24	claro	44523 43448	24. 0. 2 23.29. 3	24. 0.24 23.29.24	31. 0	23.44.54
Maj. 30	clarissimo	42428 41364	22.59.26 22.28.19	22.59.47 22.28.39	31. 8	22.44.13
Maj. 31	ut antea	42126 41058	22.50.39 22.19.21	22.51. 0 22.19.41	31.19	22.35.20
Jun. 3	Sole claro, czlo nubilo	41298 40235	22.26.23 21.55. 4	22.26.43 21.55.23	31.20	22.11. 3
Jun. 5	ut antea	40816 39757	22.12.12 21.40.53	22.12.32 21.41.12	31.20	21.56.52
Jun. 15	ut antea	39229 38177	21.25.11 20.53.44	21.25.30 20.54. 3	31.27	21. 9.46
Jun. 17	ut antea	39061 38023	21.20.11 20.49. 7	21.20.30 20.49.16	31. 4	21. 4.58
Jun. 19	clarissimo	38970 37921	21.17.28 20.46. 3	21.17.47 20.46.22	31.25	21. 2. 4
Jun. 20	Sole clarissimo	38928 37896	21.16.31 20.45.18	21.16.50 20.45.37	31.13	21. 1.13
Jun. 22	claro	38914 37875	21.15.47 20.44.40	21.16. 6 20.44.59	31. 7	21. 0.32
Jun. 24	clarissimo	38968 37919	21.17.25 20.46. 0	21.17.44 20.46.19	31.25	21. 2. 1

Jun.

1710		Tangen tes cor- re et a pe- numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G 1 11	G 1 11	1 11	G 1 11
Jul. 13	ut antea	42097 41036	22.49.47 22.18.42	22.50.6 22.19.0	31.6	22.34.33
Jul. 17	ut antea	43380 42310	23.27.5 22.56.0	23.27.26 22.56.21	31.5	23.11.53
Jul. 20	ut antea	44477 43400	23.58.40 23.27.39	23.59.2 23.28.0	31.2	23.43.31
Jul. 21	ut antea	44876 43793	24.10.8 23.39.2	24.10.30 23.39.23	31.7	23.54.56
Jul. 22	languido	45283 44200	24.21.46 23.50.45	24.22.9 23.51.7	31.2	24.6.38
Jul. 23	claro	45709 44611	24.33.53 24.2.32	24.34.16 24.2.54	31.22	24.18.35
Jul. 24	clarissimo	46143 45044	24.46.13 24.14.57	24.46.36 24.15.19	31.17	24.30.57
Jul. 26	ut antea	47056 45948	25.12.0 24.40.41	25.12.23 24.41.4	31.19	24.56.43
Jul. 27	ut antea	47529 46411	25.25.17 24.53.48	25.25.40 24.54.11	31.29	25.9.55
Jul. 28	ut antea	48019 46909	25.39.0 25.7.52	25.39.24 25.8.15	31.9	25.23.49
Jul. 30	ut antea	49035 47910	26.7.17 25.35.58	26.7.41 25.36.22	31.19	25.52.1
Jul. 31	nubilo	49554 48432	26.21.38 25.50.31	26.22.3 25.50.55	31.8	26.6.29
Aug. 4	ut antea	51792 50662	27.22.50 26.52.5	27.23.16 26.52.30	30.46	27.7.53
Aug. 15	clarissimo	59065 57838	30.33.52 30.2.40	30.34.22 30.3.9	31.13	30.18.45
Aug. 16	ut antea	59003 58572	30.51.51 30.21.31	30.53.21 30.22.0	31.21	30.37.40

Rr 2

Nov.

		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
1710			G 1 11	G 1 11	1 11	G 1 11
Nov. 19	Sole languido	206838 202005	64.11.52 63.39.46	64.13.44 63.41.35	32. 9	63.57.39
Nov. 20	ut antea	208977 204074	64.25.40 63.53.39	64.27.34 63.55.30	32. 4	64.11.32
Nov. 21	clarissimo	211114 206144	64.39.15 64. 7.19	64.41.10 64. 9.11	31.59	64.25.10
Nov. 23	ut antea	215407 210153	65. 5.51 64.33.10	65. 7.49 64.35. 4	32.45	64.51.26
Nov. 28	claro	225160 219601	66. 3. 6 65.31. 1	66. 5. 9 65.33. 1	32. 8	65.49. 5
Nov. 29	ut antea	226997 221362	66.13.29 65.41.21	66.15.33 65.43.22	32.11	65.59.27
Nov. 30	ut antea	228794 223084	66.23.28 65.51.18	66.25.33 65.53.20	32.13	66. 9.26
Dec. 4	Sole languido	235466 229428	66.59.23 66.26.57	67. 1.32 66.29. 3	32.29	66.45.17
1711						
Feb. 20	Sole claro	146995 144093	55.46.22 55.14.22	55.47.40 55.15.38	32. 2	55.31.39
Feb. 22	clarissimo	143108 140339	55. 3.19 54.31.40	55. 4.36 54.32.54	31.42	54.48.45
Feb. 23	languido	141196 138458	54.41.33 54. 9.42	54.42.47 54.10.55	31.52	54.26.51
Feb. 24	languido	139314 136628	54.19.45 53.47.57	54.20.58 53.49. 9	31.49	54. 5. 3
Feb. 25	languido	137415 134777	53.57.21 53.25.34	53.58.33 53.26.45	31.48	53.42.39
Feb. 28	ut antea	131904 129418	52.50. 0 52.18.26	52.51. 9 52.19.34	31.35	52.35.21

Mar.

		Langen tes corre ctæ a pe numbra	Diff. a vertice apparent limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
1711						
Mar. 1	clarissimo	130127 127658	52.27.31 51.55.37	52.28.39 51.56.44	31.55	52.12.41
Mar. 2	languido	128349 125925	52. 4.37 51.32.46	52. 5.44 51.33.52	31.52	51.49.48
Mar. 4	Sole claro, cælo nubilo	124893 122542	51.18.59 50.47. 3	51.20. 4 50.48. 7	31.57	51. 4. 5
Mar. 9	Sole claro	116564 114438	49.22.26 48.51. 7	49.23.27 48.52. 7	31.20	49. 7.47
Mar. 11	clarissimo	113407 111335	48.35.42 48. 4.13	48.36.41 48. 5.11	31.50	48.20.56
Mar. 12	ut antea	111879 109818	48.12.33 47.40.45	48.13.31 47.41.42	31.49	47.57.36
Mar. 13	Sole languido	110341 108323	47.48.55 47.17.17	47.49.52 47.18.13	32.59	47.34. 2
Mar. 15	ut antea	107334 105337	47. 1.33 46.29.20	47. 2.29 46.30.15	32.14	46.46.22
Mar. 25	ut antea	93516 91791	43. 4.52 42.32.58	43. 5.41 42.33.46	32.55	42.49.43
Mar. 26	Sole claro, cælo nubilo	92239 90541	42.41.18 42. 9.29	42.42. 6 42.10.16	31.50	42.26.11
Mar. 28	ut antea	89746 88084	41.54.25 41.22.30	41.55.12 41.23.16	31.56	41.39.14
Mar. 29	claro	88524 86891	41.31. 0 40.59.16	41.31.46 41. 0. 2	31.44	41.15.54
Apr. 3	languido	82683 81145	39.35. 6 39. 5.27	39.35.50 39. 4.10	31.40	39.20. 0
Apr. 7	ut antea	78329 76856	38. 4.16 37.32.40	38. 4.57 37.33.20	31.37	37.49. 8
Apr. 8	ut antea	77268 75826	37.41.34 37.10.19	37.42.14 37.10.58	31.26	37.26.36

Apr.

1711		Tangen tes corre ctæ a pe- numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	II	I	II
Apr. 11	claro	74218 72809	36.34.56 36. 3.30	36.35.34 36. 4. 7	31.27	36.19.50
Apr. 12	clarissimo	73232 71827	36.12.58 35.41.18	36.13.35 35.41.54	31.41	35.57.44
Apr. 13	clarissimo	72263 70871	35.51.11 35.19.32	35.51.48 35.20. 8	31.40	35.35.58
Apr. 14	clarissimo	71304 69926	35.29.25 34.57.49	35.30. 1 34.58.24	31.37	35.14.12
Apr. 15	ut antea	70361 69001	35. 7.51 34.36.22	35. 8.26 34.36.57	31.29	34.52.41
Apr. 17	Sole languido	68518 67188	34.25. 5 33.53.47	34.25.40 33.54.22	31.18	34.10. 7
Apr. 18	claro	67614 66290	34. 3.51 33.32.25	34. 4.26 33.31.59	31.27	33.48.42
Apr. 22	clarissimo	64171 62893	32.41.20 32.10. 1	32.41.53 32.10.33	31.20	32.26.13
Maj. 4	ut antea	55204 54018	28.54. 1 28.22.38	28.54.29 28.23. 5	31.24	28.38.47
Maj. 5	Sole claro, celo nubilo	54545 53375	28. 6.38 28. 5.28	28.37. 6 28. 5.55	31.11	28.21.30
Maj. 8	languido	52659 51502	27.46.17 27.14.58	27.46.44 27.15.24	31.20	27.31. 4
Maj. 9	ut antea	52057 50909	27.30. 0 26.58.50	27.30.26 26.59.16	31.10	26.59.51
Maj. 20	claro	46313 45214	24.51. 1 24.19.46	24.51.24 24.20. 8	31.16	24.35.46
Maj. 22	ut antea	45444 44345	24.26.21 23.54.55	24.26.43 23.55.17	31.26	24.11. 0
Maj. 27	ut antea	43503 42430	23.30.38 22.59.30	23.30.59 22.59.51	31. 8	23.15.25

Maj.

		Tangen tes cor re ctæ a pe numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim berum			Diam. app. Solis	Diff. a vertice vera cen tri		
			G	I	II	G	I	II		G	I	II
1711												
Maj. 28	Sole claro, cælo nubilo	43154 42081	23.20.32 22.49.19			23.20.53 22.49.40			31.13	23. 5.16		
Maj. 31	ut antea	42195 41134	22.52.39 22.21.35			22.53. 0 22.21.55			31. 5	22.37.27		
Jun. 1	ut antea	41899 40840	22.44. 0 22.12.55			22.44.21 22.13.15			31. 6	22.28.48		
Jun. 3	ut antea	41353 40307	22.28. 0 21.57.11			22.28.20 21.57.31			30.49	22.22.55		
Jun. 13	claro	39453 38404	21.31.51 21. 0.33			21.32.12 21. 0.53			31.14	21.16.30		
Jun. 14	ut antea	39345 38301	21.28.39 20.57.27			21.28.19 20.57.46			31.13	21.13.22		
Jun. 15	languido	39240 38204	21.25.32 20.54.33			21.25.52 20.54.52			31. 0	21.10.22		
Jun. 16	claro	39151 38109	21.22.54 20.51.42			21.23.13 20.52. 1			31.12	21. 7.37		
Jun. 17	claro	39103 38042	21.21.26 20.49.40			21.21.45 20.49.59			31.46	21. 5.52		
Jun. 18	ut antea	39025 37973	21.19. 5 20.47.36			21.19.24 20.47.55			31.29	21. 3.39		
Jun. 19	ut antea	38974 37931	21.17.35 20.46.22			21.17.54 20.46.41			31.13	21. 2.17		
Jun. 22	ut antea	38923 37872	21.16. 4 20.44.35			21.16.23 20.44.54			31.29	21. 0.38		
Jun. 23	clarissimo	38931 37887	21.16.19 20.45. 1			21.16.38 20.45.20			31.18	21. 0.59		
Jun. 25	Sole claro, cælo nubilo	38996 37952	21.18.15 20.46.58			21.18.34 20.47.17			31.17	21. 2.55		
Jun. 26	ut antea	39049 38009	21.19.49 20.48.42			21.20. 8 20.49. 1			31. 7	21. 4.34		

Jun.

1711		Tangen tes cor- re- ctæ a pe- numbra	Diff.	Diff.	Diam.	Diff.
			a vertice apparent limborum	a vertice vera lim- borum	app. Solis	a vertice vera cen- tri
			G I II	G I II	I II	G I II
Jun. 27	ut antea	39112 38073	21.21.42 20.50.40	21.22. 1 20.50.59	31. 2	21. 6.30
Jun. 28	nubilo	39100 38154	21.24.18 20.53. 3	21.24.38 20.53.22	31.16	21. 9. 0
Jul. 5	clarissimo	40138 39091	21.52.11 21.21. 3	21.52.31 21.21.23	31. 8	21.36.57
Jul. 6	ut antea	40322 39277	21.57.38 21.26.36	21.57.58 21.26.56	31. 2	21.42.27
Jul. 8	ut antea	40741 39697	22.10. 0 21.39. 6	22.10.20 21.39.26	30.54	21.54.53
Jul. 9	Sole languido	40964 39927	22.16.37 21.45.53	22.16.57 21.46.15	30.42	22. 1.36
Jul. 13	claro	42027 40972	22.47.44 22.16.48	22.48. 5 22.17. 8	30.57	22.32.36
Jul. 18	claro	43652 42584	23.34.56 23. 3.59	23.35.17 23. 4.20	30.57	23.19.48
Aug. 1	claro	49970 48842	26.33. 5 26. 1.55	26.33.30 26. 2.19	31.11	26.17.54
Aug. 29	clarissimo	70493 69128	35.10.53 34.39.20	35.11.28 34.39.55	31.33	34.55.41
Sept. 2	languido	74329 72916	36.37.23 36. 5.58	36.37.51 36. 6.35	31.16	36.22.13
Sept. 5	Sole claro, celo nubilo	77357 75919	37.41.25 37.12.20	37.44.10 37.12.59	31.11	37.28.34
Sept. 9	ut antea	81630 80116	39.13.30 38.42. 1	39.14.13 38.42.43	31.30	38.58.28
Sept. 10	claro	82734 81197	39.36. 9 39. 4.25	39.36.53 39. 4. 8	32.45	39.20.50
Sept. 12	clarissimo	84992 83420	40.21.43 39.50. 6	40.22.28 39.50.50	31.38	40. 6.39

Sept.

1711		Tangen tes cor- ræ a pe- numbra	Diff. a vertice apparen- s limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I II	G	I II	I II
Sept. 15	ut antea	88515 86898	41.30.50 40.59.24	41.31.36 41. 0.10	31.26	41.15.53
Sept. 18	ut antea	92196 90507	42.40.29 42. 8.39	42.41.17 42. 9.26	31.51	42.25.21
Sept. 19	languido	93449 91762	43. 3.38 42.32.25	43. 4.27 42.33.13	31.14	42.48.50
Sept. 23	clarissimo	98692 96904	44.37.23 44. 5.57	44.38.15 44. 6.48	31.27	44.22.31
Sept. 24	ut antea	100050 98239	45. 0.52 44.29.29	45. 1.44 44.30.20	31.24	44.46. 2
Sept. 30		108612 106627	47.21.51 46.50.14	47.22.48 46.51.10	31.38	47. 7.59
Oct. 3	languido	113148 111082	48.31.47 48. 0.23	48.32.46 48. 1.21	31.25	48.17. 3
Oct. 4	languido	114680 112610	48.54.43 48.23.40	48.55.43 48.24.39	31. 4	48.40.11
Oct. 5	languido	116184 114138	49.18.21 48.46.39	49.19.22 48.47.39	31.43	49. 3.30
Oct. 6	claro	117872 115698	49.41.23 49. 9.46	49.42.25 49.10.46	31.39	49.26.35
Oct. 8	languido	121132 118892	50.27.32 49.55.58	50.28.36 49.57. 1	31.35	50.12.48
Oct. 9	Sole claro, cælo nubilo	122803 120517	50.50.38 50.18.57	50.51.42 50.20. 3	31.41	50.35.51
Oct. 18	Sole languido	138730 136090	54.12.52 53.41.29	54.14. 4 53.42.46	31.24	53.58.22
Oct. 24	clarissimo	150295 147296	56.21.43 55.49.38	56.23. 3 55.50.56	32. 7	56. 6.59
Oct. 27	clarissimo	156380 153219	57.24. 9 56.52. 9	57.25.32 56.53.31	32. 1	57. 9.31

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Jan.

1712		Tangen tes corre Bq a pe numbra	Diff. a vertice apparenti limborum			Diff. a vertice vera lin borum			Diam. app. a vertice solis vera cen tri	
			G	I	II	G	I	II	I	II
Jan. 22	Sole languido	210088 205136	64.32.46			64.34.40			32. 7	64.18.36
Feb. 18	Sole claro	151465 148446	56.34.18			56.35.39			32.17	56.19.30
Feb. 21	languido	145500 142730	55.30. 0			55.31.17			31. 0	55.15.47
Mar. 6	claro	120234 117980	50.14.58			50.16. 2			32. 4	50. 0. 0
Mar. 11	clarissimo	112228 110174	48.17.52			48.18.51			31.36	48. 3. 3
Mar. 20	claro	99128 97317	44.44.57			44.45.49			31.42	44.29.58
Mar. 28	clarissimo	88803 87180	41.36.22			41.37. 8			31.27	41.21.24
Mar. 29	ut antea	87610 85988	41.13.18			41.14. 4			31.47	40.58.10
Mar. 30	ut antea	86422 84821	40.50. 3			40.50.49			32.47	40.34.55
Apr. 5	Sole languido	79650 78159	38.32.15			38.32.57			31.36	38.17. 9
Apr. 9	clarissimo	75463 74026	37. 2.21			37. 3. 0			31.42	36.47. 9
Apr. 10	ut antea	74459 73032	36.40.16			36.40.54			31.48	36.25. 0
Jun. 18	claro	38993 37942	21.18. 9			21.18.28			31.27	21. 2.44
Jun. 20	clarissimo	38940 37885	21.16.35			21.16.54			31.37	21. 1. 5
Jun. 22	ut antea	38927 37889	21.16.30			21.16.49			31.25	21. 1. 6

Jun.

1712		Tangen tes corre ctæ a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
Jun. 23	ut antea	38957 37910	21.17. 4 20.45.42	21.17.23 20.46. 1	31.22	21. 1.42
Jun. 24	ut antea	38995 37945	21.18.13 20.46.45	21.18.32 20.47. 4	31.28	21. 2.48
Sept. 20	ut antea	95728 93986	43.44.59 43.13.28	43.45.50 43.14.17	31.33	43.30. 3
1713						
Jun. 21	Sole clarissimo	38927 37876	21.16.11 20.44.42	21.16.30 20.45. 1	31.29	21. 0.45
Jun. 22	ut antea	38934 37880	21.16.24 20.44.49	21.16.43 20.45. 8	31.35	21. 0.55
Nov. 9		185418 181370	61.39.40 61. 7.46	61.41.21 61. 9.24	31.57	61.25.22
Nov. 14		196443 192034	63. 1.17 62.29.31	63. 3. 3 62.31.15	31.48	62.47. 9
Nov. 21		211654 206653	64.42.36 64.10.39	64.44.32 64.12.31	32. 1	64.28.31
Nov. 24		217816 212617	65.20.24 64.48.40	65.22.23 64.50.35	31.48	65. 6.29
Nov. 25		219815 214476	65.32.17 65. 0.10	65.34.17 65. 2. 7	32.10	65.18.12
Nov. 26		221796 216387	65.43.52 65.11.48	65.45.54 65.13.46	32. 8	65.29.50
Nov. 27		224715 218218	65.54.56 65.22.48	65.56.59 65.24.47	32.12	65.40.53
Nov. 28		225622 220050	66. 5.47 65.33.40	66. 7.50 65.35.40	32.10	65.51.45
Dec. 2		232655 226810	66.44.27 66.12.27	66.46.35 66.14.31	32. 4	66.30.33

S s a

Avg.

1714		Tangen- tes cor- re Hæa pe- numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis		Diff. a vertice vera cen- tri	
			G	I II	G	I II	I II		G	I II
Aug. 1	Hujus anni observationes accepi a Paulo Balbo Med. Doct. & Anat. Prof., qui eas habuit, a me rogatus	50122 48993	26.37.17	26.6.7	26.37.42	26.6.31	31.11		26.22.6	
Aug. 2		50666 49543	26.52.10	26.21.19	26.52.36	26.21.43	30.53		26.37.9	
Aug. 3		51238 50106	27.7.47	26.36.50	27.8.11	26.37.15	30.56		26.52.43	
Aug. 6		53020 52236	27.55.58	27.33.31	27.56.25	27.33.58	22.27		. . .	
Aug. 8		54274 53121	28.29.26	27.58.41	28.29.54	27.59.8	30.46		28.14.31	
Aug. 10		55556 54420	29.3.18	28.33.19	29.3.42	28.33.46	30.0		28.48.46	
Aug. 11		56251 55072	29.21.30	28.50.33	29.21.58	28.51.1	30.57		29.6.29	
Aug. 14		58357 57152	30.16.0	29.44.57	30.16.29	29.45.26	31.3		30.0.57	
Aug. 16		59828 58606	30.53.29	30.22.23	30.53.59	30.22.52	31.7		30.38.25	
Aug. 23		65401 64117	33.11.6	32.40.0	33.11.39	32.40.33	31.6		32.56.6	
Aug. 24		66254 64959	33.31.34	33.0.27	33.32.8	33.1.0	31.8		33.16.34	
Aug. 25		67126 65819	33.52.19	33.21.9	33.52.54	33.21.42	31.12		33.37.18	
Aug. 27		68898 67571	34.33.58	34.2.51	34.34.33	34.3.26	31.7		34.18.59	
Aug. 29	suspensa	70739 69380	35.16.31	34.45.11	35.17.6	34.45.46	31.20		35.1.26	

Aug.

1714		Tangen tes cor- re ctæ a pe- numbra	Diff. a vertice apparenti limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
Aug. 31		726 6	35.59.36			36. 0.13			31. 7			35.44.39		
		71263	35.28.30			35.29. 6								
Sept. 1		73609	36.21.33			36.22. 0			31.18			46. 6.21		
		73214	35.50. 5			35.50.12								
Sept. 6		78677	38.11.41			38.12.22			30.57			37.56.53		
		77230	37.40.45			37.41.25								
Sept. 8		80823	38.56.46			38.57.29			31.11			38.41.53		
		79314	38.25.36			38.26.18								
Sept. 9		81921	39.19.30			39.20.13			31.20			39. 4.33		
		80410	38.48.10			38.48.53								
Sept. 10		83032	39.42.14			39.42.58			31.20			39.27.18		
		81505	39.10.55			39.11.38								
Sept. 12		85302	40.27.54			40.28.39			31.14			40.13. 2		
		83745	39.56.41			39.57.25								
Sept. 14		87643	41.13.56			41.14.42			31.16			40.59. 4		
		86047	40.42.40			40.43.26								
Sept. 15		88842	41.37. 7			41.37.53			31.20			41.22.13		
		87224	41. 5.47			41. 6.33								
Sept. 16		90034	41.59.53			42. 0.40			30.57			41.45.11		
		88416	41.28.56			41.29.43								
Sept. 18		92527	42.46.38			42.47.26			31.22			42.31.45		
		90848	42.15.17			42.16. 4								
Sept. 19		93781	43. 9.43			43.10.32			31.13			42.54.55		
		92089	42.38.31			42.39.19								
Sept. 20		95083	43.33.23			43.34.13			31.28			43.18.29		
		93356	43. 1.56			43. 2.45								
Sept. 21		96383	43.56.42			43.57.33			31.18			43.41.54		
		94643	43.25.25			43.26.15								
Sept. 22		97727	44.20.30			44.21.21			31.34			44. 5.34		
		95948	43.48.56			43.49.47								

Sept.

		Tangen tes cor- ræ a pe- numbra	Diff. a vertice apparentis limborum		Diff. a vertice vera lim- borum		Diam. app. Solis		Diff. a vertice vera cen- tri	
			G	I II	G	I II	I II		G	I II
1714										
Sept. 24		100380 98587	45. 6.52 44.35.33		45. 7.44 44.36.25		31.19		44.52. 4	
Oct. 3		113566 111499	48.38. 5 48. 6.44		48.39. 4 48. 7.42		31.22		48.23.23	
Oct. 5		116702 114564	49.24.26 48.53. 0		49.25.27 48.54. 0		31.27		49. 9.43	
Oct. 6		118319 116130	49.46.22 49.16. 5		49.47.24 49.17. 6		30.18		49.32.15	
Oct. 9		123251 120970	50.56.45 50.25.17		50.57.49 50.26.20		31.29		50.42. 4	
Oct. 10		124932 122605	51.19.30 50.47.54		51.20.35 50.48.57		31.38		51. 4.46	
Oct. 11		126636 124271	51.42.12 51.10.36		51.43.18 51.11.40		31.38		51.27.29	
Oct. 13		130137 127688	52.27.39 51.56. 0		52.28.47 51.57. 7		31.40		52.12.57	
Oct. 14		131903 129413	52.49.59 52.18.22		52.51. 8 52.19.30		31.38		52.35.19	
Oct. 15		133701 131156	53.12.22 52.40.35		53.13.32 52.41.44		31.48		52.57.38	
Oct. 16		135521 132939	53.34.36 53. 2.56		53.35.47 53. 4. 6		31.41		53.19.56	
Oct. 21		144894 142117	55.23.17 54.52. 5		55.24.33 54.53.20		31.13		55. 8.56	
Oct. 30		163162 159866	58.29.47 57.58.23		58.31.15 57.59.49		31.26		58.15.32	
Oct. 31		165272 161898	58.49.24 58.17.51		58.50.53 58.19.18		31.35		58.35. 5	
Nov. 5		176056 172294	60.24.12 59.52. 9		60.25.48 59.53.42		32. 6		60. 9.45	

Jan.

		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G I II	G I II	G I II	I II	G I II
1715						
Jan. 6	Hujusquoque anni obser vationes a Baibo accepti	238808 232707	67.16.44 66.44.44	67.18.53 66.46.51	32. 4	67. 2.53
Jan. 20		213716 208617	64.55.29 64.23.23	64.57.20 64.25.16	32. 4	64.41.18
Jan. 21		211627 206625	64.42.29 64.10.28	64.44.24 64.12.19	32. 5	64.28.21
Jan. 22		209493 204583	64.28.55 63.57. 2	64.30.49 63.58.53	31.56	64.14.51
Jan. 26		200784 196194	63.31.28 62.59.31	63.33.17 63. 1.17	32. 0	63.17.17
Jan. 31		189697 185525	62.12.14 61.40.30	62.13.56 61.42.10	31.46	61.58. 3
Feb. 1		187453 183373	61.55.18 61.23.41	61.57. 0 61.25.21	31.39	61.41.10
Feb. 3		183022 179061	61.20.55 60.49. 5	61.22.33 60.50.42	31.51	61. 6.37
Sept. 17		90981 89334	42.17.48 41.46.13	42.18.36 41.47.20	31.16	42. 2.58
Sept. 18	dubia propter nubes	92223 90553	42.41. 0 42. 9.43	42.41.48 42.10.30	31.18	42.26. 9
Sept. 19		93460 91806	43. 3.48 42.33.15	43. 4.37 42.34. 3	30.34	42.49.20
Sept. 22		97388 95638	44.14.31 43.43.22	44.15.22 43.44.12	31.10	43.59.47
Sept. 23		98728 96943	44.38. 0 44. 6.39	44.38.52 44. 7.30	31.22	44.23.11
Sept. 27		104281 102393	46.12. 2 45.40.39	46.12.57 45.41.22	31.35	45.57. 9

Dec.

		Tangen tes cor- re & a pe numbra	Diff. a vertice apparens imborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
1715		206350 201519	64. 8.40 63.36.29	64.10.32 64.38.18	32.14	64.54.25
	Observatio hæc scripta erat apud Balbum sine diei nota, & forte ad hoc temporis in- tervallum non pertinet					
Dec. 9		241935 235733	67.32.35 67. 0.47	67.34.48 67. 2.56	31.52	67.18.52
Dec. 11		244164 238271	67.43.41 67.13.58	67.45.55 67.16. 8	29.47	67.31. 1
	<i>Desiderantur observationes aliquot hoc temporis intervallo habite</i>					
1717						
Jun. 26	ex scheda inter MS. Josephi Antonii Nadii post ejus obi- tum reperta	39080 37950	21.20.45 20.46.55	21.21. 4 20.47.14		
Oct. 24	Hæc observationes tres habuit Bononia iter faciens Franciscus Blanchinus. Ex- cerpti ex adversariis post ejus obitum mihi traditis	151375 148355	56.33. 3 56. 1. 4	56.34.24 56. 2.23	32. 1	56.18.23
Oct. 25		153385 150290	56.53.51 56.21.40	56.55.13 56.23. 0	32.13	56.39. 6
Oct. 26		155414 152333	57.14.28 56.43. 0	57.15.51 56.44.21	31.30	57. 0. 6
1718						
Dec. 13	Sole subnubilo. Major tangens valde dubia. Hanc, & sequentes hujus anni ob- servationes habuit Jos. An- tonius Nadius Phil.D. sed vi- de inf. post diem 5 Dec. 1722	247011 240595	67.57.36 67.25.49	67.59.52 67.28. 1	31.51	67.43.56

Dec.

		Tangentes correctæ a penumbra	Diff. a vertice apparentis limborum		Diff. a vertice vera limborum		Diam. app. Solis	Diff. a vertice vera centri	
			G	I II	G	I II		I	II
1718									
Dec. 19	Sole nubilo. Limbum inferiorem observare non licuit	242941	67.37.51	67.40.4					
Dec. 20	Sole claro	249798 243178	68.10.57 67.38.47	68.13.14 67.41.1	32.13	67.57.8			
Dec. 25	Sole pallido	249372 242770	68.8.56 67.36.46	68.11.13 67.39.0	32.13	67.55.7			
Dec. 26	Sole claro, cælo nubilo	248989 242385	68.7.6 67.34.50	68.9.23 67.37.4	32.19	67.53.13			
1719									
Jan. 6	Sole claro. Hæc etiam cum octo sequent. a Nadio tradita	238747 232592	67.16.24 66.44.7	67.18.35 66.46.14	32.21	67.2.24			
Jan. 15	Sole claro, cælo nebulofo	223697 218205	65.54.50 65.22.4	65.56.53 65.24.4	32.49	65.40.29			
Jan. 22	cælo nebulofo	209435 204517	64.28.36 63.56.36	64.30.28 63.58.28	32.0	64.14.28			
Jan. 29	ut antea	194097 189748	62.44.31 62.12.37	62.46.16 62.14.19	31.57	62.30.17			
Feb. 2	ut antea	185185 181134	61.37.51 61.5.52	61.39.31 61.7.30	32.1	61.23.30			
Feb. 3	ut antea	182967 178994	61.20.29 60.48.32	61.22.9 60.50.9	32.0	61.6.9			
Mar. 17	cælo subnubilo	104337 102428	46.12.57 45.41.14	46.13.51 45.42.7	31.44	45.57.59			
Mar. 18	Sole pallido	102908 101025	45.49.16 45.17.32	45.50.9 45.18.24	31.45	45.34.16			
Apr. 4	Sole claro. Hactenus Nadius. Deinceps ego	81510 79986	39.11.0 38.39.20	39.11.43 38.40.3	31.40	38.55.53			
Jun. 18	inter nubeculas	39024 37984	21.19.6 20.47.56	21.19.25 20.48.15	31.10	21.3.50			

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Jun.

		Tangen tes cor- re p fig a pe numbra	Diff. a vertice apparatus limborum	Diff. a vertice vera lim borum	Diam. app. solis	Diff. a vertice vera cen- tri
		G	1	1	1	G 1 11
1719						
Jun. 21	Sole pallidissimo	38914 37897	21.15.47 20.45.29	21.16.6 20.45.48	30.18	21. 0.57
Jun. 23	Sole clarif. observatio optima	38936 37903	21.16.27 20.45.30	21.16.46 20.45.49	30.57	21. 1. 7
Jun. 24	Sole clarif. specie tremula	38957 37933	21.17. 5 20.46.24	21.17.24 20.46.43	30.41	21. 2. 3
Jun. 25	Sole clarissimo	38998 37968	21.18.18 20.47.27	21.18.37 20.47.46	30.51	21. 3.11
Jun. 27	ægre inter nubes, Sole pallido	39107 38084	21.21.32 20.50.57	21.21.52 20.51.16	30.36	21. 6.34
Aug. 29	Sole clarissimo. Ucellus	70550 69192	35.12.12 34.40.49	35.12.46 34.41.24	31.22	34.57. 5
Sept. 13	Cælo rubibus obducto in- ter hiatus nubium. Hanc observationem cum quatuor subsequentibus excerpti e scheda Nadii manu exarata, post ejus obitum reperta	86211 84628	40.45.39 40.14.26	40.46.25 40.15.10	31.15	40.30.48
Sept. 18	Sole claro	92254 90520	42.41.35 42.10.14	42.42.24 42.11. 2	31.22	42.16.43
Sept. 21	Sole claro	96115 94352	43.51.53 43.20. 8	43.52.44 43.20.58	31.46	43.36.51
Sept. 25	Sole nebuloso	101516 99660	45.25.51 44.54. 9	45.26.44 44.55. 1	31.43	45.10.52
Sept. 28	Sole nebuloso	105736 103860	46.35.49 46. 5. 6	46.36.44 46. 6. 0	30.44	46.21.22
1720						
Mar. 24	Sole clarif. Ego & Nadius	93748 92026	43. 9. 6 42.37.20	43. 9.55 42.38. 8	31.47	42.54. 1
Maj. 28	Sole claro. Ego	42882 41816	23.12.39 22.41.35	23.13. 0 22.41.56	31. 4	22.57.28

Jun.

1720		Tangen tes cor- dæ a pe- numbra	Diff. a vertice apparentis limborum		Diff. a vertice vera lim- borum		Diam. app. Solis	Diff. a vertice vera cen- tri	
			G	I II	G	I II		I II	G
Jun. 14	inter nubes. Ego	39262 38223	21.26. 9 20.55. 6		21.26.29 20.55.25		31. 4	21.10.57	
Jun. 20	Sole claro. Nadius hanc tradidit cum sequentibus hu- jus anni	38934 37890	21.16.24 20.45. 6		21.16.43 20.45.25		31.18	21. 1. 4	
Jun. 21		38919 37881	21.15.57 20.44.51		21.16.16 20.45.10		31. 6	21. 0.43	
Jul. 11		41690 40641	22.37.53 22. 7. 3		22.38.14 22. 7.23		30.51	22.22.48	
Aug. 5		52727 51584	27.48. 5 27.17.11		27.48.32 27.17.37		30.55	27.33. 4	
Oct. 21	Observabat cum Nadio Franciscus Blanchinus Bo- nonia transiens	145930 143101	55.34.44 55. 3.14		55.36. 1 55. 4.29		31.32	55.20.15	
Oct. 24		151898 148871	56.38.30 56. 6.36		56.39.51 56. 7.55		31.56	56.23.53	
1721									
Jan. 9	Sole claro. Nadius	233504 227580	66.48.59 66.16.44		66.51. 7 66.18.48		32.19	66.34.57	
Jan. 20	Nadius	212705 207572	64.49.13 64.16.58		64.51. 9 64.18.30		32.39	64.34.49	
Jun. 30	Sole pallido. Nadius	39796 38748	21.42. 3 21.10.51		21.42.23 21.11.10		31.13	21.26.46	
Jun. 22	Sole pallido. Ego	38908 37893	21.15.37 20.45.12		21.15.56 20.45.31		30.26	21. 0.44	
Jun. 23	Sole claro, specie tremula. Ego	38942 37905	21.16.40 20.45.34		21.16.59 20.45.53		31. 6	21. 1.26	
Jun. 24	Sole clarissimo. Ego	38900 37938	21.17.46 20.46.34		21.18. 5 20.46.53		31.12	21. 2.29	

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Aug.

1721		Tangen tes corre ctæ ap- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	II	I	II
Aug. 7	Sole claro. Nadius	53824 52660	28.17.28 27.46.18	28.17.55 27.46.45	31.10	28. 2.10
Sept. 2	Nadius	74889 73476	36.49.45 36.18.25	36.50.23 36.19. 3	31.20	36.34.43
Sept. 4	Sole pallido. Idem	76901 75478	37.33.39 37. 2.42	37.34.19 37. 3.21	30.58	37.12.50
Sept. 13	nubilo. Idem	86801 85223	40.57.29 40.26.19	40.58.15 40.27. 4	31.11	40.42.39
Sept. 25	Sole nonnihil obfuscato	102224 100356	45.37.49 45. 6. 7	45.38.42 45. 6.59	31.43	45.22.50
Sept. 26	claro	103621 101695	46. 1. 8 45.28.55	46. 2. 2 45.29.48	32.14	45.45.55
Sept. 27	claro	105057 103057	46.24.46 45.51.46	46.25.41 45.52.40	32. 1	46. 8.40
Sept. 28	claro	106502 104569	46.48.12 46.16.46	46.49. 7 46.17.41	31.26	46.33.24
Sept. 29	claro	107972 106007	47.11.43 46.40.13	47.12.39 46.41. 9	31.30	46.56.54
Sept. 30	sub pallido. Ego cum Nadio	109469 107411	47.35.18 47. 2.47	47.36.15 47. 3.43	32.32	47.19.59
Oct. 1	sub pallido. Nadius	110974 108945	47.58.40 47.27. 5	47.59.38 47.28. 2	31.36	47.43.50
Oct. 3	pallido inter nubes	114035 111956	48.45. 6 48.13.43	48.46. 5 48.14.41	31.24	48.30.24
Oct. 6	Sole claro. Nadius	118795 116612	49.54.36 49.23. 8	49.55.38 49.24. 9	31.29	49.39.53
Oct. 13	pallido, inter nubes. Nadius	130641 128191	52.34. 4 52. 2.34	52.35.13 52. 3.41	31.32	52.19.27
Oct. 27	claro. Ego hodie & deinceps	157538 154356	57.35.39 57. 3.46	57.37. 3 57. 5. 8	31.55	57.21. 5

Oct.

1721		Tangen tes cor- re ctæ ap- numbra	Dift. a vertice apparens limborum			Diam. app. Solis	Dift. a vertice vera cen- tri		
			G	I	II		G	I	II
Oct. 28	claro	159622 156391	57.56. 1 57.24.16	57.57.27 57.25.40		31.47	57.41.33		
Nov. 1	claro	168021 164554	59.14.26 58.42.47	59.15.57 58.44.15		31.42	59. 0. 6		
Nov. 2	claro	170178 166626	59.33.39 59. 1.49	59.35.11 59. 3.19		31.52	59.19.15		
Nov. 6	claro	178903 175059	60.47.48 60.15.49	60.49.25 60.17.24		32. 1	60.33.24		
Nov. 7	claro	181106 177193	61. 5.39 60.33.42	61. 7.17 60.35.12		31.59	60.51.18		
Nov. 9	clarissimo tremulo	185505 181481	61.40.20 61. 8.40	61.42. 1 61.10.12		31.43	62.26. 9		
Nov. 10	clarissimo tremulo	187720 183614	61.57.20 61.25.35	61.59. 2 61.27.15		31.47	61.43. 8		
Nov. 11	specie languidissima	189876 185747	62.13.34 61.42.12	62.15.17 61.43.53		31.24	61.59.35		
Nov. 12	clarissimo, & valde tremulo	192142 187875	62.30.19 61.58.30	62.32. 9 62. 0.12		31.51	62.16. 7		
Nov. 13	specie languidissima	194339 190065	62.46.17 62.14.58	62.48. 2 62.16.41		31.21	62.32.21		
Nov. 19	Sole pallido	207508 202649	64.16.13 63.44. 8	64.18. 6 63.45.58		32. 8	64. 2. 2		
Nov. 20	Sole clarissimo, & tremulo	209625 204708	64.29.49 63.57.52	64.31.43 63.59.43		32. 0	64.15.43		
Nov. 27	Sole pallido	223825 218371	65.55.33 65.23.43	65.57.36 65.25.42		31.54	65.41.39		
Dec. 1	Sole clarissimo	231083 225294	66.35.59 66. 3.55	66.38. 5 66. 5.58		32. 7	66.22. 1		
Dec. 3	exacta clarissimo	234356 228433	66.53.31 66.21.28	66.55.40 66.23.33		32. 7	66.39.36		

Dec.

1721		Tangen- tes corre- ctæ a pe- numbra	Diff. a vertice apparentis limborum		Diff. a vertice vera lim- borum		Diam. app. Solis		Diff. a vertice vera cen- tri	
			G	I II	G	I II	I	II	G	I II
Dec. 4	clarissimo exacta	235938 229934	67. 1.51		67. 4. 0		32.10		66.47.53	
Dec. 5	clarissimo	237390 231352	67. 9.28		67.11.38		32. 6		66.55.35	
	Diebus 13, & 16 cælo sudo speciei Solaris pars, quæ in- feriori parti Solis respondet prope meridiem fere evane- scebat, imbricis cujusdam, in recto prominentis, objectu. Eum imbricem amovi die 19. Forte autem luxuri ille cæperat Solemque intercipe- re ante triennium in hac hy- berna cæli plaga, memini enim Nadium cum observa- tiones Decembri 1718 habi- tas mihi traderet, monuisse limbi inferioris imaginem, etsi clarum esset cælum, ægre distingui									
Dec. 27	Sole clarissimo	248355 241794	68. 4. 4		68. 6.20		32.15		67.50.12	
Dec. 28	Sole subpallido	247770 241263	68. 1.15		68. 3.31		32. 7		67.47.27	
Dec. 29	Sole claro. Nadius	247105 240584	67.58. 3		68. 0.19		32.21		67.44. 8	
1722										
Jan. 4	Sole clarissimo. Ego	240997 234750	67.27.53		67.30. 4		32.18		67.13.55	
Jan. 5	ut antea	239718 233580	67.21.28		67.23.40		32. 9		67. 7.35	

Jan.

1722		Tangen tes cor- de a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G 1 11	G 1 11	G 1 11	G 1 11	G 1 11
Jan. 6	subpallido	238386 232263	67.14.33 66.42.21	67.16.44 66.44.28	32.16	67. 0.36
Jan. 7	claro	236950 230911	67. 7. 8 66.35. 3	67. 9.17 66.37. 9	32. 8	66.53.13
Jan. 8	clarissimo. Ego cum Nadio	235460 229480	66.59.21 66.27.14	67. 1.30 66.29.20	32.10	66.45.25
Jan. 9	ut heri. Ego cum Nadio	233860 227958	66.50.54 66.18.51	66.53. 2 66.20.56	32. 6	66.36.59
Jan. 10	claro. Ego cum Nadio	232209 226394	66.42. 4 66.10. 7	66.44.11 66.12.11	32. 0	66.28.11
Jan. 13	claro. Idem	226950 221313	66.13.14 65.41. 4	66.15.18 65.43. 5	32.13	65.59.11
Jan. 14	claro. Idem	225101 219546	66. 2.50 65.30.41	66. 4.53 65.32.41	32.12	65.48.47
Jan. 15	claro. Ego	223175 217728	65.51.50 65.19.52	65.53.53 65.21.51	32. 2	65.37.52
Jan. 17	claro	219243 213973	65.28.54 64.57. 4	65.30.54 64.59. 1	32.53	65.14.57
Jan. 18	claro	217224 212023	65.16.51 64.44.57	65.18.50 64.46.52	32.58	65. 2.51
Jan. 19	claro. Ego & Nadius	215181 210043	65. 4.29 64.32.29	65. 6.26 64.34.23	32. 3	64.50.24
Jan. 20	claro. Ego	213114 208053	64.51.45 64.19.44	64.53.47 64.21.37	32. 4	64.37.39
Jan. 21	claro	210988 206022	64.38.27 64. 6.32	64.40.22 64. 8.23	32.59	64.24.23
Jan. 22	claro	208854 203942	64.24.53 63.52.47	64.26.47 63.54.38	32. 9	64.10.42
Jan. 25	claro	202320 197671	63.41.55 63. 9.56	63.43.44 63.11.43	32. 1	63.27.43

Jan.

1722		Tangen- tes cor- de a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G 1 11	G 1 11	1 11	G 1 11
Jan. 26	claro	200147 195362	63.27. 3 62.55. 2	63.28.53 62.56.48	32. 5	63.12.50
Jan. 27	claro	197931 193440	63.11.45 62.39.47	63.13.32 62.41.32	32. 0	62.57.32
Jan. 28	claro	193701 191302	62.56. 2 62.24. 9	62.57.48 62.25.53	31.55	62.41.50
Jan. 29	claro	193485 189154	62.40. 7 62. 8. 9	62.41.52 62. 9.51	32. 1	62.28.51
Feb. 4	inter nubes	180144 176271	60.57.54 60.26. 0	60.59.32 60.27.36	31.56	60.43.34
Feb. 6	cælo subnubilo	175710 171976	60.21.18 59.49.23	60.22.51 59.50.56	31.57	60. 6.54
Feb. 8	Sole nebulofo	171296 167728	59.43.28 59.11.48	59.45. 1 59.13.19	31.42	59.29.10
Feb. 9	Sole subnubilo. Cum Nadio	169138 165634	59.24.26 58.52.44	59.25.58 58.54.14	31.44	59.10. 6
Feb. 10	Sole languido	166987 163561	59. 5. 5 58.33.11	59. 6.35 58.34.59	31.36	58.50.47
Feb. 11	claro. Cum Nadio	164842 161513	58.45.27 58.14.11	58.46.56 58.15.38	31.18	58.31.17
Feb. 12	clarissimo	162744 159454	58.25.52 57.54.24	58.27.20 57.55.50	31.30	58.11.35
Feb. 13	claro	160655 157390	58. 5.59 57.34.11	58. 7.25 57.35.35	31.50	57.51.30
Feb. 17	claro	152351 149304	56.43.12 56.11.13	56.44.33 56.12.32	32. 1	56.28.32
Feb. 18	claro	150326 147543	56.22. 3 55.50. 9	56.23.23 55.51.28	31.55	56. 7.25
Feb. 19	claro	148307 145390	56. 0.33 55.28.52	56. 1.52 55.30. 9	31.43	55.46. 0

Feb.

1722		Tangen- tes corre- ctæ a pe- numbra	Diff. a vertice apparenti limborum			Diff. a vertice verali limborum			Diam. app. Solis		Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	G	I	II
Feb. 20	claro. Cum Nadio	146319 143470	55.38.59	55.40.16		31.37	55.24.27						
Feb. 21	clarissimo, & tremulo	144363 141581	55.17.23	55.18.39		31.27	55.2.55						
Feb. 22	ut antea. Cum Nadio	142454 139712	54.55.55	54.57.10		31.34	54.41.23						
Feb. 23	ut antea. Cum eodem	140542 137842	54.34.2	54.35.16		31.39	54.19.26						
Feb. 24	ut supra. Cum eodem	138720 136005	54.12.47	54.13.59		32.20	53.57.49						
Feb. 25	☉ claro	136807 134182	53.50.6	53.51.28		31.51	53.35.22						
Mar. 2	☉ clarissimo. Cum Nadio	127771 125180	51.57.6	51.58.13		31.38	51.42.24						
Mar. 8	clarissimo. Cum eodem	117665 115493	49.38.24	49.39.25		31.41	49.23.34						
Mar. 13	clarissimo. Nadius	109845 107812	47.41.9	47.42.6		31.50	47.26.11						
Mar. 14	subpallido. Ego	108322 106346	47.17.16	47.18.12		31.34	47.2.25						
Mar. 17	subpallido. Nadius	103941 202042	46.6.26	46.7.20		31.42	45.51.29						
Mar. 18	ut antea. Nadius	102516 100640	45.42.41	45.43.36		31.46	45.27.43						
Mar. 19	ut antea. Nadius	101121 99264	45.19.10	45.20.2		31.51	45.4.6						
Mar. 20	pallido. Ego cum Nadio	99706 97918	44.54.57	44.55.49		31.8	44.40.15						
Mar. 21	claro. Ego	98164 96567	44.31.39	44.32.30		31.40	44.16.40						

Vu

Mar.

1722		Tangen tes cor- re æ a pe- numbra	Diff. a vertice apparentis limborum		Diff. a vertice vera lim- borum		Diam. app. Solis	Diff. a vertice vera cen- tri	
			G	I II	G	I II	I II	G	I II
Mar. 27	Sole pallido. Nadius	90553 88923	42. 9.44 41.38.40		42.10.31 41.39.27		31. 4	41.54.59	
Mar. 28	subpallido. Ego	89327 87698	41.46.25 41.15. 0		41.47.12 41.15.46		31.26	41.31.29	
Mar. 29	claro. Cum Nadio	88123 86503	41.23.16 40.51.39		41.24. 2 40.52.25		31.37	41. 8. 3	
Mar. 30	subpallido	86921 85322	40.59.52 40.28.18		41. 0.38 40.29. 3		31.35	40.44.50	
Apr. 1	subpallido	84585 83023	40.13.35 39.42. 3		40.14.19 39.42.47		31.32	39.58.33	
Apr. 4	inter nubes specie minime tremula. Cum Nadio	81201 79698	39. 4.38 38.33.14		39. 5.21 38.33.56		31.25	38.49.38	
Apr. 5	claro. Cum eodem	80111 78615	38.41.55 38.10.22		38.42.37 38.11. 3		31.34	38.26.50	
Apr. 6	subnubilo. Cum eodem	79024 77557	39.19. 3 37.47.47		38.19.44 37.48.27		31.17	38. 4. 5	
Apr. 7	☉ claro. Nadius	77964 76511	37.56.29 37.25.13		37.57.10 37.25.53		31.17	37.41.31	
Apr. 9	subpallido. Ego.	75889 74502	37.11.41 36.41.13		37.12.20 36.41.52		30.28	36.57. 6	
Apr. 11	claro	73889 72475	36.27.38 35.55.58		36.28.16 35.56.35		31.41	36.12.25	
Apr. 12	claro	72906 71514	36. 5.40 35.34.13		36. 6.17 35.34.50		31.27	35.50.33	
Apr. 13	pallido	71941 70557	35.43.55 35.12.21		35.44.32 35.12.57		31.35	35.28.44	
Apr. 14	claro	70981 69606	35.22. 3 34.50.25		35.22.39 34.51. 1		31.38	35. 6.50	
Apr. 17	languido	68196 66877	34.17.34 33.46.24		34.18. 9 33.46.59		31.10	34. 2.34	

Apr.

1722		Tangen tes cor re ctæ a pe numbra	Diff. a vertice apparen limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G I II	G I II	I II	G I II	
Apr. 27	clarissimo	59941 58704	30.56.20 30.24.54	30.56.50 30.25.23	31.27	30.41. 6
Apr. 28	ut antea	59189 57968	30.37.15 30. 6. 0	30.37.45 30. 6.29	31.16	30.22. 7
Apr. 30	czło subnubilo	57733 56521	29.59.57 29.28.33	30. 0.26 29.29. 1	31.25	29.44.43
Maj. 1	czło nubilo. Deinceps ob servabat Jo: Baptista Banderius J. U. D. interdum cum Nadio, aut mecum	57017 55825	29.41.26 29.10.22	29.41.55 29.10.51	31. 4	29.26.23
Maj. 4	Sole pallido	54972 53814	28.47.55 28.17.11	28.48.23 28.17.38	30.45	28.33. 0
Maj. 6	inter nubes	53690 52534	28.13.55 27.42.54	28.14.22 27.43.21	31. 1	27.58.51
Maj. 7	nubilo	53064 51912	27.57. 9 27.26. 5	27.57.36 27.26.31	31. 5	27.42. 3
Maj. 9	subnubilo	51845 50716	27.24.16 26.53.33	27.24.42 26.53.59	30.43	27. 9.20
Maj. 10	claro	51266 50141	27. 8.33 26.37.47	27. 8.59 26.38.12	30.47	26.53.35
Maj. 11	clarissimo	50695 49565	26.52.59 26.21.57	26.53.25 26.22.22	31. 3	26.37.53
Maj. 12	ut antea	50141 49018	26.37.47 26. 6.48	26.38.12 26. 7.12	31. 0	26.22.42
Maj. 13	Sole claro	49599 48480	26.22.52 25.51.51	26.23.17 25.52.15	31. 2	26. 7.46
Maj. 14	pallido	49055 47951	26. 7.46 25.37. 5	26. 8.12 25.37.29	30.43	25.52.50
Maj. 19	Sole claro, czło nubilo	46607 45515	24.59.20 24.28.22	24.59.43 24.28.44	30.59	24.44.14

V u 2

Maj.

1722		Tangen tes cor re ctæ a pe numbra	Diff. a vertice apparenti limborum			Diff. a vertice vera lim borum			Diam. app. Solis		Diff. a vertice vera cen tri		
			G	I	II	G	I	II	I	II	G	I	II
Maj. 21	☉ pallido	45717 44632	24.34.2	24.30.9		24.34.25 24.3.31			30.54		24.18.58		
Maj. 22	☉ nubilo	45288 44210	24.21.55	23.51.1		24.22.18 23.51.23			30.55		24.6.50		
Maj. 25	claro	44105 43026	23.48.0	23.16.49		23.48.22 23.17.10			31.12		23.32.46		
Maj. 26	claro	43734 42665	23.37.18	23.6.22		23.37.40 23.6.43			30.57		23.22.17		
Maj. 27	claro	43378 42316	23.27.1	22.56.10		23.27.22 22.56.31			30.51		23.11.56		
Maj. 31	nubilo	42089 41032	22.49.34	22.18.35		22.49.55 22.18.55			31.0		22.34.25		
Jun. 2		41535 40478	22.33.21	22.2.14		22.33.42 22.2.34			31.8		22.18.8		
Jun. 3	claro	41272 40219	22.25.37	21.54.31		22.25.57 21.54.55			31.2		22.16.26		
Jun. 4		41022 39972	22.18.18	21.47.16		22.18.38 21.47.36			31.2		22.3.7		
Jun. 6	claro	40574 39526	22.5.5	21.34.2		22.5.25 21.34.22			31.3		21.49.53		
Jun. 7		40368 39317	21.59.0	21.27.49		21.59.20 21.28.9			31.11		21.43.44		
Jun. 9		39993 38948	21.47.53	21.16.49		21.48.13 21.17.8			31.5		21.32.40		
Jun. 12	serenissimo cælo. Per hos dies meridianæ hujusce lineæ examen est habitum	39537 38501	21.34.21	21.3.27		21.34.40 21.3.46			30.54		21.29.13		
Jun. 13	ut antea	39415 38383	21.30.40	20.59.55		21.31.59 21.0.14			31.45		21.16.6		

Jun.

1722		Tangen- tes cor- re- ctæ a pe- nombra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
JUN. 14	ut antea	39307 38263	21.27.31 20.56.23	21.27.50 20.56.42	31. 8	21.12.26
JUN. 15	ut antea	39212 38177	21.24.41 20.53.44	21.25. 0 20.54. 3	30.57	21. 9.31
JUN. 16	☉ claro	39119 38089	21.22.12 20.51. 6	21.22.31 20.51.25	31. 6	21. 6.52
JUN. 18	☉ claro, cælo nubilo	39013 37968	21.18.46 20.47.27	21.19. 5 20.47.46	31.19	21. 3.26
JUN. 20	subnubilo	38930 37900	21.16.17 20.45.25	21.16.36 20.45.44	30.52	21. 1.10
JUN. 21	☉ claro, cælo nubilo	38919 37889	21.15.57 20.45. 6	21.16.16 20.45.25	30.51	21. 0.50
JUN. 22	Sole clarissimo	38916 37889	21.16. 9 20.45. 6	21.18.28 20.45.25	31. 3	21. 0.56
JUN. 23		38934 37902	21.16.24 20.45.29	21.16.43 20.45.48	30.55	21. 1.15
JUN. 25		39015 37979	21.18.49 20.47.53	21.19. 8 20.48.12	30.56	21. 3.40
JUN. 26		39070 38032	21.20.27 20.49.23	21.20.46 20.49.42	31. 4	21. 5.14
JUN. 27	Sole pallido	39135 38094	21.22.23 20.51.15	21.22.43 20.51.34	31. 9	21. 7. 9
JUN. 29	claro	39318 38282	21.27.51 20.56.56	21.28.10 20.57.16	30.54	21.12.43
JUN. 30		39430 38392	21.31.11 21. 0.11	21.31.31 21. 0.20	31. 1	21.16. 0
JUL. 1		39554 38513	21.34.51 21. 3.49	21.35.11 21. 4. 8	31. 3	21.19.40
JUL. 2		39693 38653	21.39. 0 21. 8. 2	21.39.20 21. 8.21	30.59	21.23.51

Jul.

1722		Tangen tes cor- re ctæ a pe- numbra	Diff. a vertice apparent limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	II	I	II
Jul. 3	claro	39845 38801	21.43.30 21.12.25	21.43.51 21.12.45	31.6	21.28.18
Jul. 4	cælo nubilo	40011 38974	21.48.25 21.17.35	21.48.46 21.17.55	30.51	21.33.20
Jul. 5	subnubilo	40186 39150	21.53.37 21.22.49	21.53.58 21.23.9	30.49	21.38.34
Jul. 6		40386 39343	21.59.32 21.28.35	21.59.53 21.28.55	30.58	21.44.24
Jul. 7		40594 39548	22.5.41 21.34.41	22.6.2 21.35.1	31.1	21.50.31
Jul. 8		40815 39767	22.12.11 21.41.11	22.12.32 21.41.31	31.1	21.57.1
Jul. 10		41299 40248	22.26.23 21.55.26	22.26.44 21.55.46	30.58	22.11.15
Jul. 11		41582 40509	22.34.44 22.3.0	22.34.5 22.3.20	30.45	22.18.43
Jul. 12		41836 40778	22.42.10 22.11.5	22.42.31 22.11.16	31.5	22.26.58
Jul. 25		46636 45540	25.0.10 24.29.5	25.0.33 24.29.28	31.5	24.45.0
Aug. 5		52440 51294	27.40.22 27.9.19	27.40.49 27.9.45	31.4	27.25.17
Aug. 18		61390 60154	31.32.45 31.1.43	31.33.16 31.2.13	31.3	31.27.45
Aug. 19		62178 60920	31.52.22 31.21.0	31.52.53 31.21.30	31.23	31.37.12
Aug. 22		64613 63331	32.52.4 32.20.48	32.52.37 32.21.26	31.17	32.36.58
Aug. 23		65444 64166	33.12.9 32.41.13	33.12.42 32.41.45	30.57	32.57.13

Aug.

		Tangen tes cor- dæ a p numbra	Diff. a vertice apparen- limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I I	G I II	I II	G I II
1722						
Aug. 27		68958 67619	34.33.22 34. 3.59	34.33.56 34. 4.32	31.24	34.20.14
Aug. 29		70789 69428	33.17.40 34.46.15	35.18.15 34.46.50	31.25	35. 2.32
Sept. 3		75643 74221	37. 6.18 36.35. 0	37. 6.57 36.35.38	31.19	36.51.18
Sept. 5	Sole clarissimo	77686 72638	37.50.33 37.19.17	37.51.14 37.19.57	31.17	37.35.35
Sept. 6	nubilo	78734 77272	38.12.54 37.41.39	38.13.35 37.42.20	31.15	37.57.57
Sept. 8	clarissimo	80876 79381	38.57.55 38.26.23	38.58.36 38.27. 5	31.31	38.42.40
Sept. 9	observante Jo Jacobo Parma Philos. Doct.	81960 80456	39.20.17 38.49. 7	39.21. 0 38.49.49	31.11	39. 5.34
Sept. 13	Banderius iterum	88906 87276	41.38.21 41. 6.48	42.39. 8 41. 7.34	31.34	41.23.21
Sept. 16	cælo clarissimo	90115 88475	42. 1.26 41.30. 4	42. 2.14 41.30.51	31.23	41.46.33
Sept. 17	clarissimo	91342 89686	42.24.34 41.53.16	42.25.22 41.54. 4	31.18	42. 9.43
Sept. 18	ut antea	92595 90904	42.47.53 42.16.19	42.48.42 42.17. 7	31.35	42.32.54
Sept. 19	ut antea	93866 92155	43.11.17 42.39.43	43.12. 6 42.40.31	31.35	42.56.18
Sept. 20	ut antea	95151 93421	43.34.36 43. 3. 7	43.35.26 43. 3.56	31.30	43.18.41
Sept. 22	claro	97791 96007	44.21.37 43.49.59	44.22.28 43.50.50	31.38	44. 6.39
Sept. 24	nonnihil dubia	100503 98672	45. 8.39 44.37. 1	45. 9.31 44.37.52	31.39	44.53.41

Sept.

1722		Tangen tes cor- re- ctæ a pe- numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis	Diff. a vertice vera cen- tri		
			G	I	II	G	I	II		I	II	
Sept. 25	Sole pallido	101884	45.32.	5		45.32.58			31.43	45.17.	6	
		100022	45.0.23			45.1.15						
Sept. 27	Sole pallido	104705	46.19.	0		46.19.54			31.31	46.4.	8	
		102802	45.47.30			45.48.23						
Sept. 28	ut antea	106148	46.42.30			46.43.26			31.56	46.27.38		
		104214	46.10.56			46.11.50						
Sept. 30	subnubilo	109091	47.29.22			47.30.19			31.44	47.14.27		
		107090	46.57.39			46.58.35						
Oct. 2	claro	112116	48.16.9			48.17.7			31.32	48.1.22		
		110067	47.48.38			47.49.35						
Oct. 6	claro	118392	49.48.51			49.49.54			31.33	49.34.7		
		116216	49.17.21			49.18.21						
Oct. 8	pallido	121678	50.35.8			50.36.12			31.34	50.20.25		
		119428	50.3.35			50.4.38						
Oct. 9	claro	123350	50.58.7			50.59.12			31.36	50.43.24		
		121060	50.26.32			50.27.36						
Oct. 10	nubilo	125024	51.20.45			51.21.51			31.19	51.6.11		
		122718	50.49.28			50.50.32						
Oct. 11	claro	126746	51.43.39			51.44.45			31.35	51.28.57		
		124380	51.12.5			51.13.10						
Oct. 12	claro	128482	52.6.21			52.7.29			31.32	52.51.43		
		126082	51.34.51			51.35.57						
Oct. 13	clarissimo	130220	52.28.42			52.29.51			31.18	52.14.12		
		127796	51.57.25			51.58.33						
Oct. 14	claro	132002	52.51.14			52.52.24			32.50	52.36.29		
		129514	52.19.25			52.20.34						
Oct. 15	pallido	133817	53.13.47			53.14.57			31.42	52.59.6		
		131275	52.42.5			52.43.15						
Oct. 16	claro	135637	53.56.0			53.57.11			32.43	53.21.19		
		133050	53.4.18			53.5.28						

Oct.

1722		Tangen- tes cor- dæ a pe- numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis		Diff. a vertice vera cen- tri	
			G	I II	G	I II	I II		G	I II
08. 17	pallido	137462 134840	53.57.54		53.59. 6 53.27.30		31.36		53.43.18	
08. 18	Sole pallido dubia	139346 136671	54.20. 9 53.48.29		54.21.21 53.49.40		31.41		54. 5.30	
08. 24	claro	150918 147934	56.28.16 55.56.32		56.29.36 55.57.51		31.45		56.23.43	
08. 25	claro	152950 149890	56.49.23 56.17.26		56.50.44 56.18.45		31.59		56.34.45	
08. 29	pallido	161194 157908	58.11. 7 57.39.17		58.12.33 57.40.41		31.52		57.56.37	
08. 30	claro	163260 159917	58.30.42 57.59.16		58.32.10 58. 0.42		31.28		58.16.26	
08. 31	claro	165365 161998	58.50.16 58.18.48		58.51.46 58.20.14		31.32		58.36. 0	
Nov. 1	claro	167482 164031	59. 9.34 58.37.55		59.11. 4 58.39.23		31.41		58.55.13	
Nov. 8	pallido	182753 178801	61.18.48 60.46.58		61.20.26 60.48.34		31.52		61. 4.30	
Nov. 9	claro	184968 180967	61.36.10 61.41.32		61.37.50 61. 6.10		31.40		61.22. 0	
Nov. 10	pallido	187187 183076	61.53.16 61.21.21		61.54.59 61.23. 0		31.59		61.39. 0	
Nov. 20	claro	209145 204204	64.26.49 63.54.32		64.28.41 63.56.22		32.19		64.12.31	
Nov. 21	claro	211238 206281	64.40. 2 64. 8.13		64.41.57 64.10. 5		31.52		64.26. 1	
Nov. 22	claro	213335 208270	64.53. 8 64.21. 8		64.55. 5 64.23. 2		32. 3		64.39. 3	
Nov. 23	claro	215378 210250	65. 5.40 64.33.48		65. 7.37 64.35.42		31.55		64.51.40	

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Nov.

1722		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparenti limborum			Diff. a vertice vera lim borum			Diam. app. Solis			Diff. a vertice vera cen tri		
			G	I	II	G	I	II	I	II	I	G	I	II
Nov. 26	claro	221393 216050	65.41.32			65.43.34			31.50			65.27.39		
Nov. 27	claro	223345 217883	65.52.49			65.54.51			32. 4			65.38.49		
Nov. 28	claro	225247 219714	66. 3.39			66. 5.42			32. 2			65.49.41		
Nov. 29	claro	227115 221478	66.14. 9			66.16.13			32.11			66. 0. 7		
Nov. 30	claro	228877 223191	66.23.56			66.26. 1			31.59			66.10. 2		
Dec. 6	claro, cælo nubilo	238469 232378	67.14.59			67.17. 9			32. 4			67. 1. 7		
Dec. 7	claro	239813 233706	67.21.51			67.24. 2			31.49			67. 8. 7		
Dec. 11	dubia	244436 238451	67.45. 1			67.47.15			31.43			67.31.23		
Dec. 12	dubia	245380 239080	67.49.39			67.51.54			31.36			67.36. 6		
Dec. 21	Sole nonnihil nebula in vo luto. Ego cum Banderio	249933 243295	68.11.36			68.13.53			32.18			67.57.44		
Dec. 22	Sole subpallido. Ego cum Banderio	249984 243299	68.11.51			68.14. 8			32.32			67.57.52		
Dec. 27	Sole claro. Banderius	248500 241956	68. 4.46			68. 7. 2			32. 1			67.51. 1		
Dec. 28	clarissimo	247950 241398	68. 2. 7			68. 4.23			32.18			67.48.14		
Dec. 30	claro	246508 240050	67.55. 9			67.57.25			32. 9			67.41.20		

Jan.

1723		Tangen tes cor- dæ a pe- numbra	Diffr. a vertice apparens limborum	Diffr. a vertice vera lim- borum	Diam. app. Solis	Diffr. a vertice vera cen- tri
			G 1 11	G 1 11	1 11	G 1 11
Jan. 4	Sole claro . Banderius	241339 235160	67.29.35 66.57.15	67.31.47 66.59.24	32.23	67.15.35
Jan. 6	claro . Ego	238710 232607	67.16.13 66.44.12	67.18.23 66.46.20	32. 3	67. 2.21
Jan. 7	claro . Banderius	237320 231268	67. 9. 3 66.36.59	67.11.12 66.39. 4	32. 8	66.55. 8
Jan. 12	claro	229167 223470	66.25.28 65.53.32	66.27.32 65.55.35	31.57	66.11.33
Jan. 13	claro	227404 221743	66.15.46 65.43.34	66.17.49 65.45.36	32.12	66. 1.42
Jan. 15	claro	223659 218168	65.54.37 65.22.31	65.56.40 65.24.31	32. 9	65.40.35
Jan. 16	claro	221726 216329	65.43.28 65.11.27	65.45.27 65.13.24	32. 3	65.28.25
Jan. 17	subnubilo	219732 214430	65.31.47 64.59.56	65.33.47 65. 1.53	31.54	65.17.50
Jan. 25	dubia propter nives for- amen obstruentes	202847 198227	64.45.26 63.13.49	63.47.16 63.15.37	31.39	63.31.27
Jan. 30	Sole pallido	191792 187505	62.27.45 61.55.42	62.29.30 61.57.24	32. 6	62.13.27
Jan. 31	claro	189562 185401	62.11.11 61.39.31	62.12.57 61.41.11	31.46	61.57. 4
Feb. 1	claro	187341 183230	61.54.27 61.22.34	61.56.10 61.24.13	31.57	61.40.11
Feb. 2	pallido	185109 181091	61.37.16 61. 5.32	61.38.56 61. 7.10	31.46	61.23. 3
Feb. 3	claro	182884 178942	61.19.50 60.48. 6	61.21.29 60.49.45	31.44	61. 5.37
Feb. 9	claro	169661 166150	59.29. 4 58.57.28	59.30.36 58.58.58	31.38	59.14.47

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Feb.

1723		Tangen tes corv æ a pe- numbra	Diff. a vertice apparent limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G I II	G I II	I II	I II	G I II
Feb. 12	Sole claro. Obs. Parma cum Banderio	163244 159947	58.30.33 57.59.10	58.32. 1 58. 0.38	31.23	58.16.19
Feb. 19	Sole claro. Banderius	148796 145552	56. 5.48 55.33.52	56. 7. 7 55.35. 9	31.58	55.51. 8
Feb. 20	Sole claro	146802 141920	55.44.17 55.12.26	55.45.35 55.13.42	31.53	55.29.38
Mar. 19	Sole claro	101447 99587	45.24.41 44.52.52	45.25.34 44.53.44	31.50	45. 9.39
Mar. 20	cælo nubilo. Ego cum Banderio	100059 98233	45. 1. 1 44.29.22	45. 1.53 44.30.13	31.40	44.46. 3
Mar. 21	Cælo nub. cum Banderio	98686 96887	44.37.17 44. 5.40	44.38. 8 44. 6.31	31.37	44.22.19
Mar. 22	Sole claro Banderius	97341 95554	44.13.41 43.41.51	44.14.32 43.42.41	31.51	43.58.36
Mar. 23	clarissimo	96009 94246	43.50. 1 43.18.12	43.50.52 43.19. 2	31.50	43.35.57
Mar. 25	claro, cælo nubilo	93403 91687	43. 2.48 42.31. 1	43. 3.37 42.31.49	31.48	42.47.43
Mar. 26	clarissimo	92119 90438	42.39. 4 42. 7.33	42.39.52 42. 8.21	31.31	42.24. 6
Mar. 27	clariss. Parma cum Banderio	90866 89209	42.15.37 41.44. 9	42.16.25 41.44.57	31.28	42. 0.41
Mar. 29	claro. Idem	88416 86799	41.28.55 40.57.18	41.29.42 40.58.14	31.28	41.14.58
Mar. 30	claro. Banderius	87221 85616	41. 5.44 40.34. 9	41. 6.30 40.34.54	31.36	40.50.42
Mar. 31	claro. Banderius	86031 84441	40.42.21 40.10.42	40.43. 6 40.11.26	31.40	40.27.16
Apr. 1	cælo nubilo. Idem deinceps	84859 83192	40.19. 4 39.47.30	40.19.48 39.48.14	31.34	40. 4. 1

Apr.

		Langen tes corre ctæ a pe numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
1723						
Apr. 2	cælo nubilo	83720 82165	39.56.10 39.24.29	39.56.54 39.25.12	31.42	39.41.
Apr. 8	cælo claro	77169 75728	37.39.26 37. 8. 9	37.40. 6 37. 8.48	31.18	37.24.27
Apr. 9	Sole languidissimo	76123 74720	37.16.47 36.46. 2	37.17.26 36.46.40	30.46	37. 2. 3
Apr. 12	cælo subnubilo	73130 71739	36.10.41 35.39.19	36.11.18 35.39.55	31.23	35.55.36
Apr. 13	Sole claro	72166 70780	35.49. 0 35.17.28	35.49.36 35.18. 4	31.32	35.33.50
Apr. 15	claro	70264 68907	35. 3.36 34.34.11	35. 6.11 34.34.46	31.25	34.50.28
Apr. 17	languido	68426 67098	34.22.57 33.51.40	34.23.32 33.52.14	31.18	34. 7.53
Apr. 21	claro	64929 63639	32.59.44 32.28.21	33. 0.18 32.28.53	31.45	32.44.15
Apr. 23	claro	63269 61995	32.19.17 31.47.50	32.19.49 31.48.21	31.28	32. 4. 5
Apr. 26	inter nubes	60906 59650	31.20.39 30.48.58	31.21. 9 30.49.28	31.41	32. 5.18
Apr. 27	languidissimo	60114 58891	31. 0.43 30.29.40	31. 1.13 30.30.10	31. 3	30.45.41
Apr. 29	claro	58622 57407	30.22.48 29.51.52	30.23.18 29.52. 2	31.16	30. 7.40
Apr. 30	Sole claro	57901 56688	30. 4.17 29.52.55	30. 4.46 29.53.23	31.23	29.49. 5
Maj. 1	Sole claro	57185 55989	29.45.49 29.14.40	29.46.17 29.15. 6	31.11	29.30.41
Maj. 3	Sole claro, cælo nubilo specie tremula	55810 54617	29. 9.58 28.58.32	29.10.26 28.58.59	31.27	28.54.42

Maj.

1723		Tangen tes cor- re & a pe numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim borum			Diam. app. Solis			Diff. a vertice vera cen tri		
			G	I	II	G	I	II	I	II		G	I	II
Maj. 5	clarissimo	54477 53309	28.34.49	28. 3.43		28.35.16	28. 4. 9		31. 7			28.19.42		
Maj. 6	clarissimo	53830 52670	28.17.40	27.46.35		28.18. 7	27.47. 0		31. 7			28. 2.33		
Maj. 10	Sole nubilo	51403 50261	27.12.17	26.41. 6		27.12.42	26.41.30		31.12			26 57. 6		
Maj. 11	claro	50812 49696	26.56.44	26.25.34		26.57. 9	26.25.58		31.11			26.41.33		
Maj. 18	claro	47185 46079	25.15.38	24.44.24		25.16. 1	24.44.47		31.14			25. 0.24		
Maj. 20	claro	46261 45165	24.49.33	24.18.22		24.49.55	24.18.44		31.11			24.34.19		
Maj. 21	cælo nubilo	45818 44730	24.36.59	24. 5 56		24.37.21	24. 6.18		31. 3			24.21.49		
Jun. 4	Sole pallido	41077 40028	22.19.55	21.48.56		22.20.15	21.49.16		30.39			22. 4.46		
Jun. 5	claro, cælo nubilo	40839 39790	22.12.43	21.41 52		22.13. 3	21.42.13		30.50			21.57.38		
Jun. 15	Sole claro, cælo nubilo	39220 38183	21.25.13	20.53.55		21.25.33	20.54.14		31.19			21. 9.34		
Jun. 16	ut antea	39147 38104	21.22.44	20.51.33		21.23. 4	20.51.52		31.12			21. 7.28		
Jun. 17	Sole claro	39073 38032	21.20.33	20.49.22		21.20.52	20.49.41		31.11			21. 5.26		
Jun. 19	Sole claro	38968 37930	21.17.24	20.46.18		21.17.43	20.46.37		31. 6			21. 2.10		
Jun. 20	clarissimo. Tangentes no tatæ in ipsâ regula ferrea	38944 37902	21.16.42	20.45.27		21.17. 1	20.45.46		31.15			21. 1.23		
Jun. 21	claro in regula ferrea	38922 37889	21.16. 1	20.45. 4		21.16.20	20.45.23		30.57			21. 0.52		

Jun.

1723		Tangen tes cor re ctæ ap pe numbra	Dij. a vertice apparens limborum		Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G	I II	G I II	I II	G I II
Jun. 22	clarissimo in regula ferrea	38923 37887	21.16.3	20.45.1	21.16.22 20.45.20	31. 2	21. 0.51
Jun. 23	pallido in regula ferrea	38930 37901	21.16.16	20.45.25	21.16.35 20.45.44	30.51	21. 1.10
Jun. 27	pallido	39113 38081	21.21.44	20.50.51	21.22. 4 20.51.10	30.54	21. 6.37
Jun. 28	claro	39198 38158	21.24.15	20.53.10	21.24.35 20.53.30	31. 5	21. 9. 2
Jul. 2	claro	39657 38616	21.37.54	21. 6.52	21.38.14 21. 7.11	32. 3	21.22.42
Jul. 3	subpallido	39810 38768	21.42.27	21.11.26	21.42.47 21.11.45	31. 2	21.27.16
Jul. 6	Sole claro	40337 39289	21.58. 4	21.26.58	21.58.24 21.27.18	32. 6	21.42.51
Jul. 8	claro	40758 39709	22.10.30	21.39.28	22.10.50 21.39.48	31. 2	21.55.19
Jul. 10	Sole claro	41234 40183	22.24.30	21.53.33	22.24.50 21.53.53	30.57	22. 9.21
Jul. 11	ut supra	41491 40438	22.32.21	22. 1. 4	22.32.41 22. 1.24	31.17	22.17. 2
Jul. 23	Sole claro	45637 44547	24.31.52	24. 0.43	24.32.14 24. 1. 5	31. 9	24.16.39
Jul. 27	ut supra	47454 46344	25.23.12	24.51.55	25.23.35 24.52.18	31.17	25. 7.57
Jul. 28	claro specie tremula	47942 46830	25.36.52	25. 5.50	25.37.15 25. 6.13	31. 2	25.21.44
Jul. 29	Sole claro	48430 47314	25.50.29	25.19.16	25.50.53 25.19.39	31.14	25.35.16
Jul. 30	ut supra	48952 47835	26. 4.58	25.33.52	26. 5.22 25.34.15	31. 7	25.49.49

Aug.

1723		Tangen tes cor- re a pe- numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis	Diff. a vertice vera cen- tri		
		G	I	II	G	I	II	I	II	G	I	II
Aug. 6	ut supra	52910 51744	27.53. 0	27.53.26	27.21.33	27.21.38		31.28		27.37.42		
Aug. 12	ut supra	56812 55617	29.36. 8	29.37.36	29. 4.54	29. 5.22		32.14		29.21.29		
Aug. 14	ut supra	58224 57010	30.12.36	30.13. 5	29.41.16	29.41.44		31.21		29.57.24		
Aug. 15	ut supra	58950 57730	30.31.19	30.31.49	29.59.53	30. 0.22		31.21		30.16. 1		
Aug. 18	ut supra	61209 59966	31.28.14	31.28.45	30.56.38	30.57.28		31.17		31.13. 6		
Sept. 5	Sole clarissimo	77447 75998	37.45.25	37.46. 6	37.14. 4	37.14.43		31.23		37.30.24		
Sept. 12	Sole pallido	85090 83528	40.23.41	40.24.26	39.52.18	39.53. 2		31.24		40. 8.44		
Sept. 16	ut supra	89814 88180	41.55.43	41.56.31	41.24.22	41.25. 9		31.22		41.40.50		
Sept. 21	ut supra	96119 94384	43.52.21	43.53.12	43.20.43	43.21.32		31.40		43.37.22		
Sept. 23	Sole claro	98806 97020	44.39.22	44.40.13	44. 7.59	44. 8.50		31.23		44.24.31		
Sept. 24	ut supra	100170 98330	45. 2.56	45. 3.48	44.31. 4	44.31.53		31.53		44.47.51		
Sept. 25	ut supra	101549 99684	45.26.26	46.27.19	44.54.34	44.55.26		31.47		45.11.19		
Oct. 23	Sole pallido	148450 145510	56. 2. 5	56. 3.24	55.30. 7	55.31.24		32. 0		55.47.24		
Nov. 7	Sole subpallido	180035 176158	60.57. 0	60.58.38	60.25. 3	60.26.39		31.59		60.42.39		
Nov. 8	ut supra	182214 178286	61.14.40	61.16.19	60.42.44	60.44.21		31.58		61. 0.20		

Drc.

		Tangen- tes cor- re & a p- numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
1723														
Dec. 24	Sole claro	249747 243120	68.10.43			68.13. 0			32.16			67.56.52		
1724														
Jan. 26	Sole claro celo subnubilo Banderius	201230 196635	63.34.32			63.36.21			31.55			63.20.23		
Jan. 27	Sole claro	199054 194497	63.19.34			63.21.21			32. 9			63. 5.16		
Mar. 20	Sole inter nubes Banderius	99013 97207	44.42.58			44.43.49			31.39			44.27.59		
Maj. 13	Sole claro. Ego	49322 48205	26.15.13			26.15.37			31. 2			26. 0. 6		
Maj. 20	Sole claro. Banderius	45927 44831	24.40. 5			24.40.28			31.16			24.24.50		
Jun. 19	Sole cla. Ego cum Parma, Jof. Marchesio, & Dominico V Veber in ipsa regula ferrea	38950 37910	21.16.49			21.17. 8			31.10			21. 1.33		
Jun. 21	Sole lang. Ego cum Par- ma, in ipsa regula ferrea	38920 37885	21.15.58			21.16.17			31. 0			21. 0.47		
Jun. 22	Sole claro, specie trem. Par- ma, & V Veber in reg. ferrea	38927 37888	21.16.11			21.16.30			31. 7			21. 0.56		
Jul. 11	Parma	41609 40652	22.37.51			22.38.11			30.28			22.22.57		
Jul. 14		42583 41515	23. 3.58			23. 4.19			31. 8			22 48.45		
Jul. 22		45541 44454	24.29. 4			24.29.26			31. 2			24.13.55		
Jul. 24		46417 45316	24.53.57			24.54.21			31.17			24.38.47		

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Jul.

		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
1724			G I II	G I II	I II	G I II
Jul. 25		46855 45746	25. 6.20 24.34.56	25. 6.47 24.35.18	31.25	24.51. 0
Jul. 26		47332 46229	25.19.46 24.48.39	25.20. 9 24.49. 1	31. 8	25. 4.35
Jul. 27		47812 46717	25.33.12 25. 2.26	25.33.35 25. 2.49	30.46	25.18.12
Jul. 29		48819 47707	26. 1.17 25.30.17	26. 1.41 25.30.40	31. 1	25.46.10
Aug. 1		50439 49300	26.45.58 26.14.37	26.46.22 26.15. 0	31.22	26.30.41
Aug. 2		50990 49847	27. 1. 2 26.29.42	27. 1.27 26.30. 6	31.21	26.45.46
Aug. 3	Imago obscura	51566 50420	27.16.42 26.45.27	27.17. 7 26.45.51	31.16	27. 1.29
Aug. 4		52146 50993	27.32.26 27. 1. 7	27.32.51 27. 1.32	31.19	27.17.11
Aug. 5		52758 51597	27.48.55 27.17.33	27.49.21 27.17.58	31.23	27.33. 9
Aug. 6		53370 52206	28. 5.21 27.34. 4	28. 5.47 27.34.29	31.18	27.50. 8
Aug. 10		55950 54754	29.13.38 28.42. 9	29.14. 5 28.42.35	31.30	28.58.20
Aug. 12		57220 56112	29.49.17 29.17.52	29.49.45 29.18.19	31.26	29.34. 2
Aug. 13		58024 56828	30. 7.43 29.36.32	30. 8.12 29.37. 0	31.22	29.52.36
Aug. 14		58758 57548	30.26.16 29.55.13	30.26.46 29.55.42	31. 4	30.11.14
Aug. 16		60249 59022	31. 4. 8 30.33. 0	31. 4.38 30.33.30	31. 8	30.49. 4

Aug.

		Tangen- tes cor- ræ a pe- numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis	Diff. a vertice vera cen- tri	
			G	I II	G	I II	I II	G	I II
1724									
Aug. 18		61802 60537	31.43. 2 31.11.23		31.43.33 31.11.53		31.40	31.27.43	
Aug. 19		61582 61308	31. 2.22 31.30.42		32. 2.54 31.31.13		31.41	31.47. 3	
Aug. 23		65896 64583	33.23. 0 32.51.20		33.23.34 32.51.53		31.41	33. 7.43	
Aug. 24		66736 65446	33.43.31 33.12.12		33.44. 5 33.12.45		31.10	33.18.25	
Aug. 26		68522 67183	34.25.11 33.53.40		34.25.45 33.54.14		31.31	34. 9.59	
Aug. 28		70345 68982	35. 7.29 34.35.56		35. 8. 4 34.36.31		31.33	34.52.17	
Sept. 8		81455 79932	39. 9.54 38.38.10		39.10.37 38.38.52		31.45	38.54.44	
Sept. 21	Banderius. Dubia observatio	97141 95388	44.10. 9 43.38.52		44.11. 0 43.39.43		31.17	43.55.21	
Sept. 22	Banderius. Sole pallidiss.	98483 96707	44.33.44 44. 2.28		44.34.35 44. 3.19		31.16	44.18.57	
Sept. 23	Banderius. Sole pallido	99850 98037	44.57.26 44.25.56		44.58.18 44.26.37		31.41	44.42.27	
Dec. 18	Banderius. Dubia	249533 243129	68. 9.42 67.32.33		68.11.59 67.40.47		31.12	67.56.23	
1725									
Mar. 10	Banderius	114056 111952	48.45.25 48.13.39		48.46.25 48.14.37		31.48	48.30.31	
Mar. 21	Parma, ac Bander. Sole claro	97984 96188	44.25. 0 43.53.13		44.25.51 43.54. 4		31.47	44. 9.57	
Jun. 21	idem. Sole pallidiss. dubia	38912 37886	21.15.44 20.45. 0		21.16. 3 20.45.19		30.44	21. 0.41	

Y y 2

Jun.

1725		Tangen tes corre dæ a pe numbra	Dist. a vertice apparens limborum		Dist. a vertice vera lim borum		Diam. app. Solis		Dist. a vertice vera cen tri	
			G	I II	G	I II	I II		G	I II
Jun. 22	iidem ☉ claro	38917 37870	21.15.52	21.16.11	20.44.31	20.44.50	31.21		21. 0.30	
Jun. 25	iidem ☉ subpallido	39016 37989	21.18.50	21.19. 9	20.48. 6	20.48.25	30.44		21. 4.47	
Dec. 14	Marchesius, Parma, Ban- derius	247298 240840	67.58.59	68. 1.25	67.27. 4	67.29.16	31.59		67.45.15	
Dec. 17	iidem ☉ languido	249054 243470	68. 7.25	68. 9.41	67.35.16	67.37.28	32.13		67.53.34	
Dec. 19	iidem	243465 243943	68. 9.23	68.11.39	67.37.37	67.39.49	31.50		67.55.44	
Dec. 21	Parma, Marches. Banderius	249998 243346	68.11.55	68.14.12	67.39.38	67.41.52	32.20		67.58. 2	
Dec. 24	iidem	249657 243107	68.10.17	68.12.34	67.38.26	67.40.40	31.54		67.56.37	
1726										
Mar. 21	Parma, & Marchesius	98314 96503	44.30.47	44.31.39	43.58.50	43.59.41	31.58		44.15.40	
Mar. 22	iidem	96964 95179	44. 7. 1	44. 7.52	43.35. 6	43.35.56	31.56		43.51.54	
Mar. 23	Marchesius, & Parma	95628 93905	43.43.11	43.44. 1	43.21.59	43.22.48	31.23		43.28.25	
Mar. 29	iidem	89304 87734	41.45.58	41.46.46	41.15.43	41.16.29	30.17		41.31.37	
Jun. 8	Parma	43176 42124	23.21.11	23.21.32	22.50.36	22.50.56	30.36		23. 6.14	
Jun. 11	idem	39627 38640	21.37.11	21.37.31	21. 7.37	21. 7.56	29.35		21.22.43	
Jun. 17	idem	39035 38010	21.19.24	21.19.53	20.48.44	20.49. 3	30.50		21. 4.28	

Jun.

		Tangen tes cor- ræ a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
1726						
Jun. 19		38950 37907	21.16.51 20.45.37	21.17.12 20.46.56	31.16	21. 2.34
Jun. 20		38911 37915	21.15.42 20.45.55	21.16. 1 20.46.14	29.47	21. 1. 7
Jun. 21		38902 37883	21.15.26 20.44.54	21.15.45 20.45.13	30.32	21. 0.29
Jun. 23		38928 37884	21.16.13 20.44.56	21.16.22 20.45.15	31.17	21. 0.53
Jun. 25		39037 37962	21.19.28 20.47.17	21.19.47 20.47.36	32.11	21. 3.41
Jun. 26		39062 38015	21.20.13 20.48.52	21.20.32 20.49.11	31.22	21. 4.51
Jun. 29		39328 38271	21.27.51 20.56.33	21.28.10 20.56.52	31.18	21.12.31
Jun. 30		39414 38360	21.30.42 20.59.12	21.31. 1 20.59.31	31.40	21.15.21
Jul. 1		39697 38638	21.39. 6 21. 7.35	21.39.26 21. 7.54	31.32	21.23.40
Jul. 3		39848 38806	21.43.36 21.12.35	21.43.55 21.12.54	31. 1	21.28.25
Jul. 5		40207 39142	21.54.15 21.22.35	21.54.35 21.22.54	31.41	21.38.44
Aug. 25	Ego cum Francisco Blan- chino, qui Bononiz ad ali- quot dies fuit	67203 65879	33.54. 9 33.22.36	33.54.43 33.23. 9	31.34	33.38.56
Aug. 27	ego cum eodem	68987 67651	34.36. 2 34. 4.45	34.36.37 34. 5.19	31.28	34.20.58
Aug. 31	Parma	72730 71340	36. 1.45 35.30.15	36. 2.22 35.30.51	31.31	35.46.36

Sepr.

		Tangen tes corre di a pe numbra	Diff. a vertice appareus limborum		Diff. a vertice vera lim borum		Diam. app. Sollis		Diff. a vertice vera cen tri	
			G	I	II	G	I	II	I	II
1726										
Sept. 2	idem	74686 73253	36.45.18 36.13.27		36.45.57 36.14. 4		31.53		36.30. 0	
Sept. 8	idem	80919 79415	38.58.47 38.27.18		38.59.30 38.27.59		31.51		38.43.44	
Sept. 9	Blanchinus	82025 80510	39.21.37 38.50.15		39.22.20 38.50.58		31.22		39. 6 39	
Sept. 12	Parma	85402 83820	40.29.55 39.58.12		40.30.40 39.58.57		31.43		40.14.48	
Sept. 20	Parma	95203 93452	43.35.33 43. 3.42		43.36.23 43. 4.31		31.52		43.20.27	
Sept. 21	idem	96520 94741	43.59. 9 43.27.12		44. 0. 0 43.28. 1		31.59		43.44. 0	
Sept. 22	idem	97856 96035	44.22.46 43.50.29		44.23.37 43.51.20		32.17		44. 7.28	
Sept. 24		100553 98720	45. 9.29 44.37.52		45.10.21 44.38.43		31.38		44.54.52	
Sept. 26		103345 101472	45.56.33 45.25. 7		45.57.27 45.25.59		31.28		45.41.43	
Dec. 9		242319 236135	67.34.30 67. 2.53		67.36.42 67. 5. 2		31.40		67.20.52	
Dec. 10		243452 237188	67.40. 9 67. 8.22		67.42.22 67.10.31		31.51		67.26.26	
1727										
Jan. 17	Parma	219696 214457	65.31.34 65. 0. 3		65.33.34 65. 2. 0		31.34		65.17.47	
Mar. 6		121216 119087	50.28.42 49.58.46		50.29.46 49.59.49		29.57		50.14.47	
Mar. 11		123244 111168	48.33.15 48. 1.39		48.34.14 48. 2.37		31.37		48.18.25	

MAR.

		Tangen tes cor- rue a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Sollis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
1727						
Mar. 13	specie squallida	110343 108263	47.48.55 47.16.20	47.49.52 47.17.16	32.36	47.33.34
Mar. 15		107164 105221	46.58.51 46.27.27	46.59.47 46.28.22	31.25	46.44. 4
Mar. 17		104242 101354	46.11.24 45.40. 0	46.12.18 45.40.53	31.25	45.56.35
Mar. 18		102799 100958	45.47.27 45.16.23	45.48.20 45.17.15	31. 5	45.32.47
Mar. 21		98629 96852	44.36.17 44. 5. 2	44.37. 9 44. 5.51	31.16	44.21.31
Mar. 25		93264 91633	43. 2. 4 42.30. 0	43. 2.53 42.30.48	32. 5	42.46.50
Mar. 29		88367 86759	41.27.59 40.56.42	41.28.46 40.57.28	31.22	41.13. 9
Maj. 3		55779 54586	29. 9. 9 28.37.43	29. 9.36 28.38.10	31.26	28.53.53
Maj. 7		53182 52013	28. 0.19 27.28.51	28. 0.45 27.29.16	31.29	27.45. 1
Maj. 9		51967 50814	27.27.36 26.56.13	27.28. 1 26.56.38	31.23	27.12.19
Maj. 10	In alia schedula Parmæ hu- jusce observationis numeri tribus particulis majores no- tabantur	51385 50251	27.11.47 26.40.49	27.12.12 26.41.14	30.58	26.56.43
Maj. 13		49702 48573	26.25.43 25.54.22	26.26. 7 25.54.46	31.21	26.10.26
Maj. 14		49169 48050	26.11. 0 25.39.52	26.11.24 25.40.15	31. 9	25.55.49
Maj. 16		48138 47017	25.42.20 25.10.55	25.42.44 25.11.18	31.26	25.27. 1

Maj.

		Tangen tes corre ctæ ap- numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim- borum	Diam. app. solis	Diff. a vertice vera cen- tri
1727			G I II	G I II	I II	G I II
Maj. 17		47639 46533	25.28.22 24.57.15	25.28.45 24.57.38	31. 7	25.13.11
Maj. 21		45802 44705	24.36.33 24. 5.14	24.36.55 24. 5.56	31.19	24.21.15
Maj. 23		44968 43871	24.12.46 23.41.15	24.13. 8 23.41.36	31.32	23.57.24
Jun. 11		39705 38652	21.39.21 21. 7.58	21.39.41 21. 8.17	31.24	21.23.59
Jun. 12		39562 38512	21.35. 6 21. 3.47	21.35.26 21. 4. 6	31.20	21.19.46
Jun. 14		39323 38268	21.28. 0 20.56.28	21.28.20 20.56.57	31.23	21.12.38
Jun. 15		39216 38188	21.24.48 20.54. 4	21.25. 8 20.54.23	30.45	21. 9.46
Jun. 16		39144 38093	21.22.39 20.51.13	21.22.59 20.51.32	31.27	21. 7.15
Jun. 17		39061 38034	21.20.17 20.49.27	21.20.31 20.49.46	30.45	21. 5. 9
Jun. 18		39018 37961	21.18.55 20.47.15	21.19.15 20.47.34	31.41	21. 3. 24
Jun. 21		38918 37887	21.15.57 20.45. 2	21.16.17 20.45.21	30.56	21. 0.49
Jun. 22		38918 37874	21.15.57 20.44.38	21.16.17 20.44.57	31.20	21. 0.37
Jun. 23		38922 37901	21.16. 2 20.45.27	21.16.22 20.45.46	30.36	21. 2. 4
Jun. 24		38966 37907	21.17.22 20.45.38	21.17.42 20.45.57	31.45	21. 1.49
Jun. 26		39052 38005	21.19.54 20.48.35	21.20.14 20.48.54	31.20	21. 4.34

Jun.

		Tangen tes cor re ctæ a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G 1 11	G 1 11	1 11	G 1 11
1727						
Jun. 27		39119 38078	21.21.57 20.50.46	21.22.17 20.51. 5	31.12	21. 6.41
Sept. 15	Observante Franc. Vandellio	88637 87050	41.33.10 41. 2.23	41.33.57 41. 3. 9	30.48	41.18.33
Sept. 20	Parma	94892 93165	43.29.56 42.58.36	43.30.46 42.59.25	31.21	43.15. 5
Sept. 21		96197 94436	43.53.22 43.21.39	43.54.13 43.22.29	31.44	43.38.21
Sept. 22		97519 95739	44.16.49 43.45.11	44.17.40 43.46. 2	31.38	44. 1.51
Sept. 24		100282 98401	45. 4.51 44.32.18	45. 5.43 44.33. 9	32.34	44.49.26
1728						
Jan. 4	Parma	241591 235493	67.30.51 66.59.32	67.33. 3 67. 1.41	31.22	67.17.22
Jan. 15		224057 218586	65.56.53 65.25. 0	65.58.56 65.27. 0	31.56	65.42.58
Mar. 17		103154 101275	45.53.23 45.21.35	45.54.17 45.22.28	31.49	45.38.23
Mar. 18		101731 99856	45.29.30 44.57.33	45.30.22 44.58.25	31.57	45.14.23
Apr. 3		81705 80168	39.15. 3 38.43. 6	39.15.46 38.43.48	31.58	38.59.47
Apr. 4		80585 79090	38.51.50 38.20.26	38.52.33 38.21. 8	31.25	38.36.50
Apr. 7		77399 75920	37.44.23 37.12.21	37.45. 5 37.13. 0	32. 3	37.29. 1
Apr. 9		75337 73898	36.59.37 36.27.49	37. 0.16 36.28.27	31.49	36.44.22

Z z

Apr.

		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparentis limborum			Diff. a vertice vera lim borum			Diam. app. Solis	Diff. a vertice vera cen tri		
			G	I	II	G	I	II		G	I	II
1728												
Apr. 11		73337 71943	36.15.19	35.43.57		46.15.56	35.44.33		31.23	36. 0.15		
Apr. 12		72374 70979	35.53.42	35.22. 0		35.54.19	35.22.36		31.42	35.38.28		
Apr. 14		70466 69085	35.10.15	34.38.20		35.10.50	34.38.55		31.55	34.54.52		
Apr. 16		68620 67270	34.27.29	33.55.44		24.28. 4	33.56.18		31.46	34.12.11		
Apr. 19		65965 64619	33.24.39	32.52.13		33.25.13	32.52.47		32.26	33. 9. 0		
Apr. 20		65105 63789	33. 3.57	32.32. 0		33. 4.30	32.32.32		31.58	32.48.31		
Jun. 15		39160 38097	21.23. 7	20.51.20		21.23.27	20.51.39		31.48	21. 7.33		
Jun. 18		38980 37939	21.17.46	20.46.35		21.18. 6	20.46.54		31.22	21. 2.30		
Jun. 20		38923 37882	21.16. 4	20.44.53		21.16.23	20.45.13		31.11	21. 0.47		
Jun. 24		38975 37937	21.17.36	20.46.31		21.17.55	20.46.50		31. 5	21. 2.22		
Jul. 5		40304 39239	21.57. 6	21.25.29		21.57.26	21.25.50		31.36	21.41.38		
Sept. 20		95892 94155	43.47.56	43.16.33		43.48.45	43.17.22		31.23	43.33. 4		
Sept. 25		102651 100782	45.45. 0	45.13.24		45.45.53	45.14.16		31.37	45.30. 4		
Dec. 21		250045 243373	68.12. 8	67.39.46		68.14.25	67.42. 0		32.25	67.58.12		
Dec. 28		247615 241106	68. 0.31	67.28.25		68. 2.47	67.30.37		32.10	67.46.42		

Maj.

1729		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim borum		Diam. app. Solis	Diff. a vertice vera cen tri	
			G	I II	G	I II	I II	G	I II
Maj. 5	Parma	54119 52957	28.25.19 27.54.16		28.25.46 27.54.42		31. 4	28.10.14	
Maj. 12		49971 48861	26.33. 7 26. 2.27		26.33.31 26. 2.51		31.40	16.18.41	
Maj. 23		44755 43680	24. 6.39 23.35.44		24. 7. 1 23.36. 5		30.56	23.52. 3	
Jun. 15		39194 38166	21.24. 9 20.53.25		21.24.29 20.53.44		30.45	21. 9. 6	
Jun. 20		38907 37881	21.15.36 20.44.51		21.15.55 20.45.10		30.45	21. 0.32	
Jun. 21		38932 37875	21.16.22 20.44.40		21.16.41 20.44.59		31.42	21. 0.50	
Jun. 22		38926 37890	21.16. 9 20.45. 8		21.16.28 20.45.27		31. 1	21. 0.58	
Jun. 24		38971 37932	21.17.30 20.46.23		21.17.49 20.46.42		31. 7	21. 2.15	
Jun. 29		39244 38200	21.25.37 20.54.26		21.25.57 20.54.45		31.12	21.10.21	
Aug. 31		73006 71604	36. 7.56 35.36.15		36. 8.33 35.36.51		31.42	35.52.42	
Sept. 1		73978 72553	36.29.36 35.57.44		36.30.14 35.58.21		31.53	36.14.17	
Dec. 19	ad hunc enim diem pertinet observatio, licet notata d. 18	249743 243129	68.10.42 67.38.33		68.12.59 67.40.46		32.13	67.56.52	
1730									
Jun. 18	Parma	39003 37955	21.18.27 20.47. 4		21.18.46 20.47.23		31.23	21. 3. 4	
Jun. 20		38924 37890	21.16. 5 20.45. 7		21.16.24 20.45.16		30.58	21. 0.55	

		Tangen tes corre ctæ ap- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
1730						
Jun. 22		38924 37879	21.16. 5 20.44.47	21.16.24 20.45. 6	31.18	21. 0.45
Jun. 26		39077 38022	21.20.39 20.49. 6	21.20.59 20.49.25	31.34	21. 5.12
Jun. 27		39143 38102	21.22.37 20.51.29	21.22.57 20.51.48	31. 9	21. 7.22
Jul. 4		40024 38981	21.48.49 21.17.47	21.49. 9 21.18. 7	31. 2	21.33.38
Sept. 23	Observ. Gabriele fratre clarissimo	99229 97435	44.46.42 44.15.21	44.47.33 44.16.12	31.21	44.31.52
1731						
Mar. 18	ex hac die observationes habere cæpit Jos. Roverfius	102751 100889	45.46.39 45.15.13	45.47.33 45.16. 5	31.28	45.31.49
Mar. 20		99938 98140	44.58.57 44.27.45	44.59.49 44.28.36	31.13	44.44.12
Mar. 21		98583 96801	44.35.29 44. 4. 8	44.36.20 44. 4.39	31.21	44.20.39
Mar. 22		97247 95469	44.12. 2 43.40.20	44.12.53 43.41.10	31.42	43.57. 1
Mar. 23		95907 94155	43.48.12 43.16.33	43.49. 3 43.17.22	31.41	43.33.12
Mar. 24		94600 92862	43.24.38 42.52.50	43.25.27 42.53.39	31.48	43. 9.33
Mar. 28		89538 87900	41.50.27 41.18.57	41.51.15 41.19.44	31.31	41.35.29
Apr. 2		83611 82084	39.53.58 39.22.50	39.54.42 39.23.33	31. 9	39.59. 7
Apr. 7		78125 76684	37.59.56 37.28.57	38. 0.37 37.29.37	31. 0	37.45. 7

Apra

		Tangen tes corre ctæ a pe- numbra	Diff. a vertice apparens limborum		Diff. a vertice vera lim- borum		Diam. app. Solis	Diff. a vertice vera cen- tri	
			G	I II	G	I II		I II	I II
1731									
Apr. 25	Roverius	61587 60355	31.37.41 31. 6.48		31.38.12 31. 7.18		30.54	31.22.45	
Jun. 16		39135 38095	21.22.23 20.51.17		21.22.43 20.51.36		31. 7	21. 7. 9	
Jun. 18		39009 37975	21.18.38 20.47.40		21.18.57 20.47.59		30.58	21. 3.28	
Jun. 19		38956 37928	21.17. 4 20.46.15		21.17.24 20.46.34		30.50	21. 1.59	
Jun. 20		38933 37912	21.16.22 20.45.47		21.16.41 20.46. 6		30.35	21. 1.23	
Jun. 21		38925 37893	21.16. 8 20.45.11		21.16.27 20.45.30		30.57	21. 0.58	
Jun. 22		38913 37892	21.15.46 20.45.11		21.16. 5 20.45.30		30.35	21. 0.47	
Jun. 23		38928 37909	21.16.13 20.45.42		21.16.32 20.46. 1		30.31	21. 1.16	
Jun. 24		38961 37921	21.17.11 20.46. 3		21.17.30 20.46.22		31. 8	21. 1.56	
Jun. 25		38998 37960	21.18.18 20.47.13		21.18.37 20.47.32		31. 5	21. 3. 4	
Jul. 3		39817 38770	21.42.40 21.11.29		21.42.59 21.11.48		31.11	21.27.23	
Jul. 10		41256 40210	22.25. 9 21.54.20		22.25.29 21.54.40		30.49	22.10. 4	
Jul. 16		43010 41952	23.16.21 22.45.34		23.16.42 22.45.55		30.47	23. 1.18	
Jul. 30	Sole clarissimo	48982 47867	26. 5.48 25.34.45		26. 6.12 25.35. 8		31. 4	25.50.40	
Aug. 25		67011 65710	33.49.36 33.18.32		33.50.10 33.19. 6		31. 4	33.34.38	

Sept.

		Tangen tes corre ctæ a pe numbra	Dist. a vertice appareus limborum			Dist. a vertice vera lim borum			Diam. app. Solis		Diff. a vertice vera cen tri		
			G	I	II	G	I	II	I	II	G	I	II
1731													
Sept. 17		91120 89470	41.20.24 41.49.9			42.21.12 41.49.57			31.15		42.5.34		
Sept. 18		92379 90701	42.43.53 42.12.31			42.44.42 42.13.19			31.23		42.29.0		
Sept. 19		93643 91946	43.7.11 42.35.51			43.8.0 42.36.39			31.21		42.52.19		
Sept. 20		94930 93197	43.30.37 42.59.0			43.31.27 42.59.49			31.38		43.15.38		
Sept. 21	Julius Accetta Augustinia nus in Taurinensi gymnasio mathematicus Regius, cum Gabriele fratre	96248 94473	43.54.17 43.22.20			43.55.8 43.23.10			31.58		43.39.8		
Sept. 22	Roverfius	97558 95787	44.17.31 43.46.2			44.18.22 43.46.53			31.29		44.2.39		
Sept. 23		98896 97100	44.40.56 44.9.26			44.41.48 44.10.17			31.31		44.26.2		
Sept. 24		100164 98434	45.4.33 44.32.52			45.5.25 44.33.43			31.42		44.49.34		
Sept. 25		101637 99790	45.27.55 44.56.23			45.28.48 44.57.15			31.33		45.13.1		
Sept. 26		103042 101170	45.51.31 45.20.0			45.52.25 45.20.52			31.33		45.36.38		
Sept. 27		104466 102566	46.15.5 45.43.33			46.15.59 45.44.27			31.32		46.0.13		
Dec. 23		149868 143227	68.11.17 67.39.2			68.13.34 67.41.15			32.19		67.57.25		
Dec. 24		149708 143068	68.10.34 67.38.15			68.12.51 67.40.28			32.23		67.56.39		
Dec. 25		149466 142812	68.9.23 67.36.58			68.11.39 67.39.12			32.27		67.55.26		

Dec.

		Tangen tes corre dia a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
			G I II	G I II	I II	G I II
1731						
Dec. 26		249073 242440	68. 7.30 67.35. 7	68. 9.46 67.37.19	32.27	67.53.33
Dec. 27		248587 241999	68. 5.12 67.32.52	68. 7.28 67.35. 4	32.24	67.51.16
Dec. 28		248019 241480	68. 2.28 67.30.18	68. 4.44 67.32.30	32.14	67.48.37
Dec. 29		247561 240844	67.59.18 67.27. 6	68. 1.34 67.29.18	32.16	67.45.26
1732						
Jan. 8	Roversius	236076 230040	67. 2.34 66.30.18	67. 4.43 66.32.24	32.19	66.48.34
Jan. 9		234530 228525	66.54.27 66.21.39	66.56.36 66.24. 4	32.32	66.40.20
Jan. 10		232895 227033	66.45.42 66.13.42	66.47.50 66.15.46	32. 4	66.31.48
Jan. 12		229495 223749	66.27.20 65.55. 7	66.29.26 65.57.10	32.16	65.13.18
Mar. 18		101692 99825	45.28.50 44.57. 0	45.29.43 44.57.51	31.52	45.13.47
Mar. 21		97585 95783	44.18. 0 43.45.59	44.18.51 43.46.49	32. 2	44. 2.50
Mar. 24		93597 91911	43. 6.21 42.35.11	43. 7.10 42.35.59	31.11	42.51.34
Mar. 26		91077 89396	42.19.35 41.47.44	42.20.23 41.48.32	31.52	42. 4.27
Jun. 14		39244 38199	21.25.38 20.54.24	21.25.58 20.55.43	30.15	21.10.50
Jun. 18		38971 37949	21.17.29 20.46.53	21.17.48 20.47.12	30.36	21. 2.30

Jun.

1732		Tangen- tes corre- ctæ a pe- numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
Jun. 20		38926	21.16.	9		21.16.28			30.59			21.	1.	9
		37897	20.45.20			20.45.39								
Jun. 21		38916	21.15.46			21.16.	5		30.53			21.	0.48	
		37893	20.45.13			20.45.32								
Jun. 25		39043	21.19.36			21.19.55			31.	3		21.	4.23	
		38004	20.48.33			20.48.52								
Jun. 30		39493	21.33.3			21.33.23			30.33			21.18.	6	
		38470	21.2.31			21.2.50								
Jul. 5		39945	21.46.28			21.46.48			31.	5		21.31.15		
		38901	21.15.24			21.15.43								
Sept. 21		97231	44.11.45			44.12.36			31.29			43.56.52		
		95466	43.40.17			43.41.7								
Sept. 22		98575	44.35.18			44.36.9			31.38			44.20.20		
		96775	44.3.40			44.4.31								
Sept. 23		99924	44.58.41			44.59.33			31.29			44.43.49		
		98110	44.27.13			44.28.4								
Sept. 26		104101	46.9.4			46.9.58			31.6			45.54.25		
		102234	45.37.59			45.38.52								
Sept. 27		105557	46.32.55			46.33.50			31.46			46.17.57		
		103623	46.1.10			46.2.4								
Dec. 21		249924	68.11.33			68.13.50			32.18			67.57.41		
		243283	67.39.19			67.41.32								
Dec. 22		249882	68.11.21			68.13.38			32.30			67.57.23		
		243203	67.38.55			67.41.8								
Dec. 23		249730	68.10.40			68.12.57			32.18			67.56.48		
		243107	67.38.26			67.40.39								
1733														
Mar. 16	Roverfius	104879	46.21.51			46.22.46			31.44			46.6.54		
		102960	45.50.8			45.51.2								

Mar.

1733		Tangen tes corre ctæ ape- numbra	Diff. a vertice apparentis limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
Mar. 31		85331 83755	40.28.29			40.29.14			31.37			40.13.25		
Jun. 21		38918 37891	21.15.54			21.16.13			30.45			21. 0.50		
Jun. 22		38925 37897	21.16. 8			21.16.27			30.48			21. 1. 3		
Jun. 24		38972 37952	21.17.31			21.17.50			30.33			21. 2.33		
Jun. 26		39079 38058	21.20.45			21.21. 4			30.35			21. 5.47		
Sept. 15	clarissimo	89308 87674	41.46. 3			41.46.51			31.44			41.30.59		
Sept. 16	clarissimo	90521 88876	42. 9. 7			42. 9.55			31.22			41.54.14		
Sept. 17	clarissimo	91760 90093	42.32.23			42.33.11			31.23			42.17.29		
Sept. 18	clarissimo	93023 91330	42.55.48			42.56.37			31.28			42.40.53		
Sept. 19	clarissimo	94285 92582	43.18.55			43.19.45			31.16			43. 4. 7		
Sept. 22	clare	98243 96450	44.29.33			44.30.24			31.39			44.14.35		
Sept. 24	claro	100957 99123	45.16.23			45.17.15			31.31			45. 1.29		
Sept. 25	clarissimo	102342 100487	45.39.48			45.40.41			31.27			45.24.58		
Sept. 26	clarissimo	103750 101873	46. 3.16			46. 4.10			31.23			45.48.29		

1733		Tangen- tes cor- re a pe- numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
O β . 13	<i>Specie clara, & maxime tremula. Observabat hodie, & deinceps ad diem 7 Aprilis 1734 Andreas Celsius Regiæ scientiarum Upsalienfis Aca- demix a secretis, atque Astro- nomix Professor Regius. Ex eius autographo humanissi- me mihi tradito observatio- nes totidem verbis descripsi, correctis tantum a penumbra tangentium numeris</i>	130818				52.36.18			52.37.27			31.25		
		128370				52. 4.54			52. 6. 2					52.21.44
O β . 15	<i>specie clara, & satis tremula</i>	134400				53.20.57			53.22. 8			31.43		53. 6.16
		131845				52.49.16			52.50.25					
O β . 16	<i>specie ut supra</i>	136236				53.43.14			53.44.25			31.27		53.28.42
		133656				53.11.48			53.12.58					
O β . 21	<i>ut supra</i>	145630				55.31.26			55.32.43			31. 8		55.17. 9
		142844				55. 0.20			55. 1.35					
O β . 22	<i>specie non satis clara, sed satis tremula</i>	147591				55.52.50			55.54. 9			31.31		55.38.23
		144718				55.21.21			55.22.38					
O β . 28	<i>specie satis clara, sed parum tremula dub.</i>	159808				57.57.50			57.59.16			31.48		57.43.22
		156573				57.26. 4			57.27.28					
O β . 29	<i>specie clara, & satis tremula</i>	161874				58.17.43			58.19.10			31.31		58. 3.24
		158615				57.46.14			57.47.39					
Nov. 3	<i>specie clarif. & max. tremula</i>	172494				59.53.52			59.55.26			31.38		59.39.37
		168896				59.22.16			59.23.48					
Nov. 4	<i>ut supra</i>	174682				60.12.37			60.14.12			31.59		59.58.13
		170977				59.40.40			59.42.13					
Nov. 8	<i>specie clara, & satis tremula</i>	183500				61.24.41			61.26.21			31.49		61.10.27
		179530				60.52.55			60.54.32					
Nov. 10	<i>specie ut supra</i>	187920				61.58.51			62. 0.34			31.47		61.44.40
		183808				61.27. 7			61.28.47					

Nov.

1733		Tangen- tes cor- de a pe- nombra	Dist. a vertice apparens limborum	Dist. a vertice vera lim- borum	Diam. app. Solis	Dist. a vertice vera cen- tri
		G	I	II	I	II
Nov. 11	<i>specie clarif. & max. tremula</i>	190130 185965	62.15.28 61.43.54	62.17.12 61.45.35	31.37	62. 1.23
Nov. 12	<i>specie ut supra</i>	192338 188070	62.31.46 61.59.59	62.33.31 62. 1.42	31.49	62.17.37
Nov. 14	<i>specie clarif. & max. tremula</i>	196755 192346	63. 3.30 62.31.49	63. 5.17 62.33.34	31.43	62.49.25
Nov. 15	<i>specie clara, & max. tremula</i>	198960 194480	63.18.55 62.47.18	63.20.43 62.49. 4	31.39	63. 4.54
Nov. 18	<i>specie clarif. & max. tremula</i>	205520 200770	64. 3.14 63.31.23	64. 5. 5 63.33.12	31.53	63.49. 8
Nov. 19	<i>ut supra</i>	207642 202824	64.17. 5 63.45.18	64.18.58 63.47. 8	31.50	64. 3. 3
Nov. 20	<i>ut supra</i>	209786 204895	64.30.50 63.59. 6	64.32.44 64. 0.57	31.47	64.15.50
Nov. 21	<i>ut supra</i>	211907 206930	64.44.14 64.12.28	64.46. 9 64.14.20	31.49	64.30.15
Nov. 24	<i>specie sat. clara, & parum trem.</i>	218050 212873	65.21.48 64.50.15	65.23.46 64.52.11	31.35	65. 7.59
Nov. 26	<i>specie clarif. & max. tremula</i>	222012 216638	65.45. 7 65.13.19	65.47. 9 65.15.17	31.52	65.31.13
Nov. 27	<i>specie clarif. & satis tremula</i>	223942 218477	65.56.14 65.24.21	65.58.17 65.26.20	31.57	65.42.18
Nov. 28	<i>specie non sat. cl. & parū trem.</i>	225843 220265	66. 7. 1 65.34.55	66. 9. 5 65.36.55	32.10	65.53. 0
Nov. 29	<i>specie clara, & satis tremula</i>	227648 222030	66.17. 7 65.45.14	66.19.12 65.47.16	31.56	66. 3.14
Dec. 2	<i>ut supra</i>	232844 227020	66.45.29 66.13.38	66.47.36 66.15.42	31.54	66.31.39
Dec. 9	<i>specie non satis clara, & pa- rum tremula dub.</i>	242615 236405	67.35.59 67. 4.18	67.38.11 67. 6.27	31.44	67.22.19

		Tangen- tes cor- re & a pe- numbra	Dist. a vertice apparens limborum	Dist. a vertice vera lim- borum	Diam. app. Solis	Dist. a vertice vera cen- tri
1733			G 1 11	G 1 11	1 11	G 1 11
Dec. 20	<i>specie ut supra eum Roversio</i>	249833 243197	68.11. 8 67.38.53	68.13.25 67.41. 7	32.18	67.57.16
Dec. 21	<i>specie clarissima, & maxime tremula cum eodem</i>	249920 243315	68.11.32 67.39.28	68.13.50 67.41.41	32. 9	67.57.45
Dec. 23	<i>specie clara, & satis tremula</i>	249784 243165	68.10.53 67. 8.44	68.13.11 67.40.57	32.14	67.57. 4
Dec. 29	<i>specie pallida, & parum trem.</i>	246994 240486	67.57.31 67.25.16	67.59.47 67.27.27	32.20	67.43.37
1734						
Jan. 6	<i>specie cl. & sat. trem. cum Rov.</i>	238218 232163	67.13.42 66.41.49	67.15.52 66.43.56	31.56	66.59.54
Jan. 10	<i>specie ut supra</i>	232020 226206	66.41. 3 66. 9. 4	66.43.10 66.11. 8	32. 2	66.27. 9
Jan. 12	<i>specie clarif. & max. trem.</i>	228555 222875	66.22. 9 65.50. 7	66.24.14 65.52. 9	32. 5	66. 8.11
Jan. 14	<i>ut supra</i>	224897 219340	66. 1.45 65.19.29	66. 3.48 65.31.29	32.19	65.47.38
Jan. 24	<i>ut supra dub.</i>	204305 199608	63.55.12 63.23.24	63.57. 3 63.25.12	31.51	63.41. 8
Jan. 25	<i>specie clara, & satis tremula</i>	202103 197475	63.40.28 63. 8.34	63.42.18 63.10.21	31.57	63.26.19
Jan. 26	<i>ut supra</i>	199920 195375	63.25.33 62.53.42	63.27.21 62.55.26	31.55	63.11.23
Jan. 27	<i>specie pallidissima, & parum tremula dub.</i>	197662 193250	63. 9.53 62.38.24	63.11.40 62.40. 9	31.31	62.55.55
Jan. 28	<i>specie clara, & satis tremula</i>	195460 191110	62.54.18 62.22.44	62.56. 5 62.24.29	31.36	62.40.17
Jan. 29	<i>specie clara, & satis tremula cum Roversio</i>	193255 188956	62.38.27 62. 6.40	62.40.12 62. 8.23	31.49	62.24.21

Jan.

1734		Tangen tes cor- dæ a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Sollis	Diff. a vertice vera cen- tri
		G I "	G I "	I "	G I "	
Jan. 30	specie clarif. & max. trem.	191024 186798	62.22.6 61.30.18	62.23.50 61.52.0	31.50	62. 7.55
Jan. 31	ut supra	188798 184674	62. 5.29 61.33.53	62. 7.12 61.35.33	31.39	61.51.23
Feb. 1	specie clarif. & satis trem.	186565 182500	61.48.31 61.16.47	61.50.13 61.18.26	31.47	61.34.20
Feb. 5	specie subpallida, & parum tremula dub.	177708 173884	60.37.58 60. 5.49	60.39.34 60. 7.23	32.11	60.23.28
Feb. 8	specie clarif. & maxime trem.	171048 167510	59.41.17 59. 9.50	59.42.50 59.11.20	31.30	59.27. 5
Feb. 9	ut supra	168902 165395	59.22.19 58.50.33	59.23.50 58.52. 2	31.48	59. 7.56
Feb. 10	specie clara, & satis tremula	166754 163350	59. 2.58 58.31.34	59. 4.28 58.33. 2	31.26	58.48.55
Feb. 11	ut supra	164635 161320	58.43.32 58.12.21	58.45. 1 58.13.48	31.13	58.29.25
Feb. 12	specie clarif. & maxime trem.	162529 159260	58.23.50 57.52.31	58.25.17 57.53.56	31.21	58. 9.37
Feb. 13	ut supra	160465 157200	58. 4.10 57.32.18	58. 5.36 57.33.42	31.54	57.49.39
Feb. 15	ut supra	156274 153127	57.23. 5 56.51.12	57.24.28 56.52.33	31.55	57. 8.30
Feb. 16	specie clara, & satis tremula cum Gabr. Manfredio	154197 151087	57. 2. 9 56.30. 2	57. 3.31 56.31.22	32. 9	56.47.26
Feb. 17	ut supra cum Roversio	152169 149123	56.41.19 56. 9.17	56.42.40 56.10.36	32. 4	56.26.38
	Nocte seq. specie Lunæ pal- lidissima, & vix tremula Tan- gentes limborum Lunæ 78281, 76828.					

Feb.

1734		Tangen- tes cor- re- ctæ p numbra	Dist. a vertice apparens limborum	Dist. a vertice vera lim- borum	Diam. app. Solis	Dist. a vertice vera cen- tri
		G	1	11	1	11
Feb. 18	<i>specie clara, & satis tremula</i>	150115 147151	56.19.49 55.48. 4	56.21. 8 55.49.22	31.46	56. 5.15
Feb. 19	<i>specie clara, & maxime trem.</i>	148120 145202	55.58.33 55.26.42	55.59.52 55.27.59	31.53	55.43.55
Feb. 20	<i>specie clara, & satis trem.</i>	146128 143287	55.36.54 55. 5.20	55.38.11 55. 6.35	31.36	55.22.23
Feb. 21	<i>specie clariss. & max. trem.</i>	144185 141420	55.15.24 54.44. 8	55.16.40 54.45.22	31.28	55. 1. 1
Feb. 22	<i>specie ut supra</i>	142267 139563	54.53.48 54.22.40	54.55. 3 54.23.52	31.21	54.39.28
Feb. 23	<i>specie clara, & satis trem. dub.</i>	140373 137707	54.32. 4 54. 0.49	54.33.17 54. 2. 1	31.16	54.17.39
Feb. 24	<i>Sole clariss. & specie max. trem.</i>	138500 135866	54.20.12 53.38.47	54.11.24 53.19.58	31.26	53.55.41
Feb. 25	<i>ut supra cum Reverso</i>	136642 134035	53.48. 7 53.16.28	53.49.18 53.17.38	31.40	53.33.28
Feb. 26	<i>specie pallida, & parum trem.</i>	134779 132226	53.25.35 52.54. 2	53.26.46 52.55.12	31.34	53.10.59
Feb. 27	<i>specie sat. clara, & max. trem.</i>	132977 130445	53. 3.24 52.31.34	53. 4.34 52.32.43	31.51	52.48.38
Mar. 1	<i>specie clara, & satis tremula</i>	129373 126950	52.17.49 51.46.20	52.18.57 51.47.26	31.31	52. 3.12
Mar. 2	<i>specie subpallida, & sat. trem.</i>	127596 125247	51.54.48 51.23.44	51.55.56 51.24.50	31. 6	51.40.23
Mar. 3	<i>specie clariss. & maxime trem.</i>	125890 123550	51.32.18 51. 0.49	51.33.24 51. 1.54	31.30	51.17.39
Mar. 4	<i>ut supra</i>	124163 121851	51. 9.11 50.37.31	51.10.16 50.38.35	31.40	50.54.25
Mar. 5	<i>specie cl. & sat. trem. cum Rev.</i>	122475 120183	50.46. 7 50.14.19	50.47.11 50.15.22	31.49	50.31.16

Mar.

		Tangen- tes cor- re et a pe- numbra	Dist. a vertice apparentis limborum			Dist. a vertice vera lim- borum			Diam. app. Solis			Dist. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
1734														
Mar. 6	Tenuis nubes mediam quasi speciem Solis secabat, & ideo margo alter pallidus, & parum tremulus, alter vero speciei margo clarus, & satis tremulus	120804 118571				50.22.57 49.51.24			50.24.0 49.52.27			31.33		50. 8.13
Mar. 11	Specie clara, & satis tremula	112761 110714				48.27.57 47.54.39			48.26.56 47.55.37			31.19		48.11.17
Mar. 13	Specie clariss. & max. trem.	109593 107583				47.37.12 42. 5.32			47.38. 9 47. 6.26			31.43		47.22.17
Mar. 17	ut supra cum Roversio	103798 101909				46. 4. 4 45.32.30			46. 4.58 45.33.23			31.35		45.49.11
Mar. 18	Specie clara, & satis trem. dub.	102386 100506				45.40.32 45. 8.42			45.41.25 45. 9.34			31.51		45.25.29
Mar. 21	Specie clara, & parum trem. cum Rustaebio Zanotto	98220 96438				44.29.79 43.57.41			44.30.20 43.58.32			31.48		44.14.26
Mar. 24	Specie subpallida, & par. trem.	94242 92537				43.18. 8 42.46.38			43.18.57 42.47.26			31.31		43. 3.12
Mar. 25	Specie pallidiss. & parum trem.	92934 91278				42.54.10 42.23.21			42.54.59 42.24. 9			30.50		42.39.34
Mar. 28	Specie pallida, & parum trem. cum Roversio	89210 87599				41.44.11 41.13. 6			41.44.52 41.13.52			31. 6		41.29.25
Mar. 29	Specie subpall. & parum trem.	87993 86396				41.20.45 40.49.33			41.21.32 40.50.18			31.14		41. 5.55
Mar. 31	Specie clariss. & satis trem.	85621 84056				40.34.14 40. 2.58			40.34.59 40. 3.42			31.17		40.19.21
Apr. 2	Specie clariss. & satis trem.	83323 81784				39.48. 8 39.16.41			39.48.51 39.17.24			31.27		39.33. 8
Apr. 3	Specie clara, & satis trem. cum Roversio	82192 80673				39.25. 4 38.53.40			39.25.47 38.54.23			31.24		39.10. 5

Apr.

1734		Tangen- tes cor- re- ctæ a pe- numbra	Diff. a vertice apparentis limborum			Diff. a vertice vera lim- borum			Diam. app. Solis	Diff. a vertice vera cen- tri		
			G	I	II	G	I	II		G	I	II
Apr. 4	specie clariff. & satis trem.	81092 79583	39. 2.22			39. 3. 5			31.53	38.47.18		
			38.30.50			38.31.32						
Apr. 5	specie clara, & satis tremula	79988 78513	38.39.22			38.40. 4			31.14	38.24.27		
			38. 8. 9			38. 8.50						
Apr. 6	specie pallida, & parum trem.	78915 77453	38.16.44			38.17.25			31.12	38. 1.49		
			37.45.33			37.46.13						
Apr. 7	ut supra	77844 76423	37.53.56			37.54.37			30.59	37.59.18		
			37.23.18			37.23.58						
Apr. 8	Observante iterum Roverfio hodie, & deinceps. Sole claro	76812 75365	37.31.43			37.32.23			31.31	37.16.37		
			37. 0.13			37. 0.52						
Apr. 9	Sole pallido	75769 74369	37. 9. 3			37. 9.42			30.48	36.54.18		
			36.38.16			36.38.54						
Apr. 11	Sole subpallido	73782 72372	36.25.14			36.25.52			31.37	36.10. 3		
			35.53.38			35.54.15						
Apr. 12	Sole clarissimo	72795 81400	36. 3.10			36. 3.47			31.34	35.48. 0		
			35.31.37			35.32.15						
Apr. 13	Sole claro	71821 70450	35.41.11			35.41.48			31.21	35.26. 7		
			35. 9.52			35.10.27						
Apr. 14	Sole clarissimo	70880 69518	35.19.45			35.20.20			31.23	35. 4.38		
			34.48.22			34.48.57						
Apr. 15	Sole clarissimo	69945 68591	34.58.15			34.58.50			31.26	34.43. 7		
			34.26.49			34.27.24						
Apr. 16	Sole pallido	69016 67696	34.36.43			34.37.18			30.57	34.21.50		
			34. 5.47			34. 6.21						
Apr. 17	Sole claro	68127 66796	34.15.56			34.16.50			31.27	34. 0.46		
			33.44.29			33.45. 3						
Apr. 18	Sole pallido	67218 65908	33.54.30			33.55. 4			31.13	33.39.28		
			33.23.17			33.23.51						
Apr. 19	Sole pallidissimo	66339 65044	33.33.56			33.34.10			31. 6	33.18.37		
			33. 2.31			33. 3. 4						

Apr.

1734		Tangen- tes cor- ræ a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	II	I	II
Apr. 23	Sole pallidissimo	62978 61728	32.12. 7 31.41.10	32.12.39 31.41.41	30.58	31.57.10
Maj. 14	Sole claro	49009 47894	26. 6.33 25.35.31	26. 6.57 25.35.54	31. 3	25.51.25
Maj. 15	pallidissimo	48452 47387	25.51. 5 25.21.18	25.51.29 25.21.41	29.48	25.36.35
Maj. 18	Sole claro	47024 45918	25.11. 5 24.39.50	25.11.28 24.40.13	31.15	24.55.50
Maj. 20	Sole clarissimo	46113 45012	24.45.22 24.14. 1	24.45.45 24.14.23	31.22	24.30. 4
Maj. 21	Sole pallido	45667 44593	24.32.41 24. 2. 1	24.33. 3 24. 2.23	30.40	24.17.43
Maj. 26	Sole claro	43698 42626	23.36.15 23. 5.12	23.36.36 23. 5.33	31. 3	23.21. 4
Maj. 29	Sole subpallido	42674 41618	23. 6.35 22.35.46	23. 6.56 22.36. 6	30.50	22.51.31
Jun. 1	Sole clarissimo	41776 40715	22.40.24 22. 9.14	22.40.44 22. 9.34	31.10	22.25. 9
Jun. 2	Sole claro	41506 40449	22.32.30 22. 1.23	22.32.50 22. 1.43	31. 7	22.17.16
Jun. 4	Sole clarissimo	40997 39956	22.17.33 21.46.47	22.17.53 21.47. 7	30.46	22. 2.30
Jun. 5	Sole clarissimo	40760 39722	22.10.34 21.39.53	22.10.54 21.40.13	30.41	21.55.34
Jun. 7	Sole clarissimo	40341 39298	21.58.11 21.27.15	21.58.31 21.27.35	30.56	21.43. 3
Jun. 8	Sole subpallido	40154 39111	21.52.40 21.21.40	21.53.10 21.22. 0	31.10	21.37.35
Jun. 10	Sole clarissimo	39810 38769	21.42.26 21.11.27	21.42.46 21.11.46	31. 0	21.27.16

Bbb

Jun.

1734		Tangen tes cor- re ctæ a pe- numbra	Dist. a vertice apparent limborum	Dist. a vertice vera lim- borum	Diam. app. Solis	Dist. a vertice vera cen- tri
		G I II	G I II	I II	G I II	I II
Jun. 11	Sole clarissimo	39658 38625	21.37.57 21. 7. 9	21.38.17 21. 7.28	30.49	21.22.53
Jun. 13		39396 38357	21.30. 9 20.59. 8	21.30.29 20.59.27	31. 2	21.14.58
Jun. 14	Sole clarissimo	39292 38257	21.27. 4 20.56. 7	21.27.24 20.56.26	30.58	21.11.55
Jun. 15	Sole clarissimo	39202 38166	21.24.24 20.53.24	21.24.44 20.53.43	31. 1	21. 9.13
Jun. 16	Sole pallidissimo	39042 38108	21.19.36 20.51.40	21.19.55 20.51.59	27.56	
Jun. 17	Sole subpallido	39052 38025	21.19.55 20.49.10	21.20.14 20.49.29	30.45	21. 4.52
Jun. 21	Sole clarissimo	38931 37887	21.16.18 20.45. 1	21.16.37 20.45.20	31.17	21. 0.58
Jun. 22	Sole clarissimo	38927 37890	21.16.11 20.45. 7	21.16.30 20.45.26	31. 4	21. 0.58
Jun. 23	Sole clarissimo	38941 37905	21.16.37 20.45.33	21.16.56 20.45.52	31. 4	21. 1.24
Jun. 24	Sole clarissimo	38975 37944	21.17.36 20.46.43	21.17.55 20.47. 2	30.53	21. 2.29
Jun. 25	Sole clarissimo	39012 37996	21.18.44 20.48.18	21.19. 3 20.48.37	30.26	21. 3.50
Jun. 26	Sole clarissimo	39066 38038	21.20.20 20.49.34	21.20.39 20.49.53	30.46	21. 5.16
Jun. 28	Sole clarissimo	39225 38193	21.25. 4 20.54.13	21.25.23 20.54.32	30.51	21. 9.57
Jun. 30	Sole pallido	39428 38414	21.31. 7 21. 0.51	21.31.27 21. 1.10	30.17	21.16.19
Jul. 3	Sole clarissimo	39863 38827	21.44. 2 21.13.11	21.44.22 21.13.30	30.52	21.28.56

Jul.

1734		Tangen- tes cor- re a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G 1 11	G 1 11	1 11	G 1 11
Jul. 8	Sole clarissimo	40837 39795	22.12.49 21.42. 1	22.13. 9 21.42.21	30.48	21.57.45
Jul. 9	Sole clarissimo	41078 40026	22.19.57 21.48.51	22.20.17 21.49.11	31. 6	22. 4.44
Jul. 10	Sole clarissimo	41328 40281	22.27.16 21.56.25	22.27.36 21.56.45	30.51	22.12.10
Aug. 26	inter nubes	68030 66836	34.13.39 33.45.26	34.14.13 33.46. 0	28.13	
Aug. 27	Sole clarissimo	69047 67713	34.37.27 34. 6.11	34.38. 2 34. 6.45	31.17	34.22.23
Aug. 28	Sole clarissimo	69963 68612	34.58.41 34.27.19	34.59.16 34.27.54	31.22	34.43.35
Aug. 31	Sole clarissimo	72784 71399	36. 2.56 35.31.35	36. 3.33 35.32.11	31.22	35.47.52
Sept. 1	Sole clarissimo	73761 72363	36.24.47 35.53.27	36.25.24 35.54. 4	31.20	36. 9.44
Sept. 2	Sole clarissimo	74739 73337	36.46.27 36.15.19	36.47. 6 36.15.56	31.10	36.31.31
Sept. 3	Sole clarissimo	75744 74327	37. 8.30 36.37.21	37. 9. 9 36.37.59	31.10	36.53.34
Sept. 4	Sole clarissimo	76761 75328	37.30.38 36.59.24	37.31.18 37. 0. 7	31.15	37.15.40
Sept. 6	Sole clarissimo	78842 77379	38.15.12 37.43.58	38.15.53 37.44.38	31.15	38. 0.15
Sept. 7		79869 78432	38.35.56 38. 6.28	38.37.33 38. 7. 9	30.24	38.22.21
Sept. 12	observavit Eustach. Zanottus	85475 83905	40.31.21 39.59.58	40.32. 6 40. 0.42	31.24	40.16.24
Sept. 17	Sole claro. Iterum Roverfius	91417 89801	42.26.43 41.55.26	42.27.31 41.56.16	31.15	42.11.53

1734		Tangen- tes cor- re & a pe numbra	Dist. a vertice apparens limborum			Dist. a vertice vera lim- borum			Diam. app. Solis	Dist. a vertice vera cen- tri		
			G	I	II	G	I	II	I II	G	I	II
Sept. 18	Sole clarissimo	92711 91027	42.50. 2			42.50.51			31.24	42.35. 9		
			42.18.39			42.19.27						
Sept. 19	Sole clarissimo	93986 92275	43.13.28			43.14.17			31.31	42.58.31		
			42.41.58			42.42.46						
Sept. 20	Sole clarissimo	95277 93539	43.36.52			43.37.42			31.36	43.21.54		
			43. 5.17			43. 6. 6						
Nov. 5	Sole claro	176349 172568	60.26.40			60.28.16			32.11	60.12.10		
			59.54.31			59.56. 5						
Nov. 7	Sole claro	180768 176863	61. 2.56			61. 4.34			32. 1	60.48.33		
			60.30.57			60.32.33						
Nov. 8	Sole pallido	182943 179001	61.20.18			61.21.57			31.45	61. 6. 5		
			60.48.35			60.50.12						
Nov. 9	Sole clarif. observavit Zanot.	185177 181137	61.37.48			61.39.29			31.57	61.23.30		
			61. 5.54			61. 7.32						
Nov. 10	Sole clarif. iterum Roverfius	187368 183261	61.54.39			61.56.22			31.55	61.40.24		
			61.22.48			61.24.27						
Nov. 11	Sole clarissimo	189594 185404	62.11.28			62.13.12			31.58	61.57.13		
			61.39.33			61.41.14						
Nov. 12	ut supra	191783 187537	62.27.41			62.29.26			31.47	62.13.33		
			61.55.56			61.57.39						
Nov. 13	Sole claro	194000 189668	62.43.50			62.45.36			31.52	62.29.40		
			62.12. 0			62.13.44						
Nov. 14	Sole clarissimo	196197 191795	62.59.33			63. 1.20			31.48	62.45.26		
			62.27.47			62.29.32						
Nov. 15	Sole ut supra	198433 193910	63.15.16			63.17. 4			32. 6	63. 1. 1		
			62.43.12			62.44.58						
Nov. 16	Sole claro	200597 196029	63.30.12			63.32. 1			31.53	63.16. 4		
			62.58.21			63. 0. 8						
Nov. 28	Sole clarissimo	225353 219797	66. 4.15			66. 6.18			32. 8	65.50.14		
			65.32.10			65.34.10						

Nov.

		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparen limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera tri
			G I II	G I II	I II	G I II
1734						
Nov. 29	Sole claro obf. Zanottus	227146 221567	66.14.19 65.42.32	66.16.23 65.44.34	31.49	66. 0.29
Dec. 1	Iterum Roverfius. Sole claro	230855 224996	66.34.44 66. 2.14	66.36.50 66. 4.17	32.33	66.20.33
Dec. 2	Sole clarissimo	232414 226595	66.43.10 66.11.15	66.45.17 66.13.19	31.58	66.29.18
Dec. 3	Sole pallidissimo . Incerta observatio	233876 227866	66.50.58 66.18.20	66.53. 6 66.20.25	32.41	66.36.45
Dec. 22	Sole claro	249939 243293	68.11.40 67.39.22	68.13.38 67.41.37	32.21	67.57.47
1735						
Jan. 13	Roverfius, czlo nubilo	227175 221559	66.14.29 65.42.29	66.16.33 65.44.31	32. 2	66. 0.32
Jan. 14	Sole claro	225346 219768	66. 4.13 65.32. 0	66. 6.16 65.34. 2	32.14	65.50. 9
Jan. 15	Sole clarissimo	223415 217945	65.53.13 65.21.11	65.55.16 65.23.13	32. 3	65.39.14
Jan. 16	Sole clarissimo	221475 216083	65.42. 0 65. 9.58	65.44. 0 65.11.56	32. 4	65.27.58
Jan. 17	Sole clarissimo	219510 214210	65.30.28 64.58.31	65.32.28 65. 0.28	32. 0	65.16.28
Jan. 28	clarissimo	195986 191603	62.58. 3 62.26.22	62.59.50 62.28. 7	31.53	62.44. 4
Jan. 29	clarissimo	193790 189453	62.42.19 62.10.24	62.44. 3 62.12. 7	31.56	62.28. 5
Jan. 30	clarissimo	191547 187308	62.25.57 61.54.12	62.27.42 61.55.55	31.47	62.11.49
Feb. 7		173799 170127	60. 5. 6 59.33.12	60. 6.40 59.34.44	31.56	59.50.42

Feb.

1733		Tangen- tes cor- re a pe- numbra	Diff. a vertice apparenti limborum			Diff. a vertice vera lim- borum			Diam. app. Solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
Feb. 9	Sole clarissimo	169443 165916	59.27. 8			59.28.40			31.51			59.12.44		
Feb. 10	Sole clarissimo	167290 163833	59. 7.50			59. 9.20			31.48			58.53.26		
Feb. 11	Sole clarissimo	165144 161796	58.48.14			58.49.43			31.23			58.34. 2		
Feb. 12	ut supra	163043 159747	58.28.41			58.30. 9			31.29			58.14.25		
Feb. 15	ut supra	156771 153600	57.28. 2			57.29.26			32. 1			57.13.25		
Mar. 18	clarissimo	102719 100851	45.46. 7			45.47. 1			31.34			45.31.14		
Mar. 23	inter nubes	95860 94116	43.47.21			43.48.12			31.33			43.17.26		
Mar. 31	claro	85908 84316	40.39.56			40.40.41			31.46			40.24.48		
Apr. 4	clarissimo	81343 79837	39. 7.34			39. 8.17			31.25			38.52.34		
Apr. 16	observ. Hercules Antonius Collinus S. Theol. Doct.	69236 67898	34.41.50			34.42.25			31.18			34.26.46		
Apr. 27	clarissimo. Roverius	60042 58802	30.58.54			30.59.24			31.31			30.43.38		
Jun. 9	clarissimo	40014 38972	21.48.30			21.48.50			30.59			21.33.21		
Jun. 18	Sole clarissimo. Roverius	39015 37978	21.18.48			21.19. 8			31. 4			21. 3.36		
Jun. 21	clarissimo	38921 37896	21.16. 0			21.16.20			30.45			21. 0.58		
Jun. 22	claro obs. Franc. Ab. Garam- pius Arimin. cum Roverio	38915 37890	21.15.49			21.16. 9			30.44			21. 0.47		

Jun.

		Tangen tes corre ctæ a pe nombra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
1735			G 1 11	G 1 11	1 11	G 1 11
Jun. 23	claro . Roverfius	38939 37908	21.16.33 20.45.38	21.16.33 20.45.37	30.56	21. 1.25
Jun. 25	clarissimo	39002 37982	21.18.25 20.47.53	21.18.45 20.48.12	30.33	21. 3.28
Jun. 26	clarissimo	39056 38020	21.20. 1 20.49. 0	21.20.21 20.49.20	31. 1	21. 4.50
<i>Quæ sequuntur observationes operi jam absoluto adjecta sunt</i>						
Sept. 12	Sole claro. Deinceps obser vabat Pet. Ant. Serangelus Romanus Med. Doc. inter dum cum Roverfio	85190 83634	40.25.40 39.54.26	40.26.25 39.55.10	31.25	40.10.47
Sept. 14	clarissimo	87522 85925	41.11.35 40.40.16	41.12.21 40.41. 1	31.20	40.56.41
Sept. 15	clarissimo	88710 87109	41.34.35 41. 3.32	41.35.22 41. 4.18	31. 4	41.19.50
Sept. 16	cælo nubilo	89920 88297	41.57.43 41.26.37	41.58.31 41.27.24	31. 7	41.42.57
Sept. 17	clarissimo	91155 89514	42.21. 3 41.49.59	42.21.51 41.50.47	31. 4	42. 6.19
Sept. 19	cælo nubilo , specie clara	93672 91973	43. 7.43 42.36.20	43. 8.32 42.37. 8	31.24	42.52.50
Sept. 20	ut supra	94927 93243	43.30.33 42.59.51	43.31.23 43. 0.40	30.43	43.16. 2
Sept. 22	specie languidissima	97576 95830	44.17.49 43.46.48	44.18.40 43.47.39	31. 1	44. 3. 9
Sept. 23	specie clara	98934 97142	44.41.36 44.10.10	44.42.28 44.11. 1	31.27	44.26.44
Sept. 24	clara	100293 98489	45. 5. 2 44.33.50	45. 5.54 44.34.41	31.23	44.50.17

Sept.

1735		Tangen tes corre ctæ a p numbra	Dist. a vertice apparent limborum			Dist. a vertice vera lim borum			Diam. app. Solis			Dist. a vertice vera cen tri		
			G	I	II	G	I	II	I	II		G	I	II
Sept. 26	☉ nubilo dub. Serangelus	103020 101267	45.51. 8 45.21.39			45.52. 2 45.22.32			29.30			45.37.17		
Sept. 29	specie vividissima	107395 105461	47. 2.32 46.31.21			47. 3.28 46.32.16			31.12			46.47.52		
Sept. 30	Sole claro	108890 106905	47.26.13 46.54.41			47.27.10 46.55.37			31.33			47.11.24		
Oct. 1	nubilo	110394 108361	47.49.42 47.17.52			47.50.40 47.18.48			31.52			47.34.44		
Oct. 2	vividissimo	111890 109883	48.12.42 47.41.46			48.13.40 47.42.43			30.57			47.58.11		
Oct. 3	ut supra	113433 111371	48.36. 5 48. 4.46			48.37. 4 48. 5.44			31.20			48.21.24		
Oct. 4	ut supra	114988 112887	48.59.17 48.27.51			49. 0.17 48.28.50			31.27			48.44.33		
Oct. 5	cælo sereno	116554 114441	49.22.17 48.51.10			49.23.18 48.52.13			31. 5			49. 7.45		
Oct. 7	sereno	119799 117584	50. 8.50 49.37.15			50. 9.53 49.38.17			31.36			49.54. 5		
Oct. 10	Sole claro	124775 122443	51.17.24 50.45.40			51.18.29 50.46.44			31.45			51. 2.36		
Oct. 15	Sole claro	133513 131005	53.10. 2 52.38.40			53.11.12 52.39.49			31.23			52.55.31		
Oct. 16	ut supra	135344 132762	53.32.27 53. 0.43			53.33.38 53. 1.53			31.45			53.17.45		
Oct. 17	nubilo	137172 134566	53.54.27 53.22.58			53.55.39 53.24. 9			31.30			53.39.54		
Oct. 27		156710 153548	57.27.26 56.55.31			57.28.50 56.56.53			31.57			57.12.51		
Oct. 28		158779 155567	57.47.49 57.16. 0			57.49.14 57.17.23			31.51			57.33.18		

Oct.

1735		Tangen- tes cor- dæ a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Sollis	Diff. a vertice vera cen- tri
			G I II	G I II	I II	G I II
Oct. 29	Serangelus	160883 157605	58. 8.10 57.36.18	58. 9.36 57.37.42	31.54	57.53.39
Oct. 31		165007 161667	58.46.58 58.15.40	58.48.27 58.17. 7	31.20	58.32.47
Nov. 1		167134 163708	59. 6.25 58.34.54	59. 7.55 58.36.22	31.33	58.52. 8
Nov. 2		169281 165766	59.25.42 58.53.57	59.27.14 58.55.27	31.47	59.11.20
Nov. 3	sereno	171421 167840	59.44.33 59.12.48	59.46. 6 59.14.19	31.47	59.30.12
Nov. 4	ut supra	173596 169954	60. 3.22 59.31.38	60. 4.56 59.33.10	31.46	59.49. 3
Nov. 5	ut supra	175797 172054	60.22. 2 59.50. 4	60.23.37 59.51.37	32. 0	60. 7.37
Nov. 6	ut supra	178000 174183	60.40.22 60. 8.22	60.41.59 60. 9.56	32. 3	60.25.57
Nov. 7	ut supra	180192 176345	60.58.17 60.26.38	60.59.55 60.28.14	31.41	60.44. 4
Nov. 8	Sole pallido	182405 178502	61.16. 2 60.44.30	61.17.41 60.46. 7	31.34	61. 1.54
Nov. 9	sereno	184611 180632	61.33.23 61. 1.50	61.35. 3 61. 3.28	31.35	61.19.15
Nov. 11		189033 184882	62. 7.15 61.35.30	62. 8.58 61.37.10	31.48	61.53. 4
Nov. 12	sereno	191244 187007	62.23.43 61.51.54	62.25.27 61.53.36	31.51	62. 9.26
Nov. 15	Sole claro	197869 193371	63.11.19 62.39.17	63.13. 7 62.41. 3	32. 4	62.57. 5
Nov. 16	claro	200083 195524	63.26.40 62.54.46	63.28.29 62.56.33	31.56	63.12.31

Ccc

Nov.

1735		Tangen- tes cor- re- ctæ a pe- numbra	Diff. a vertice apparatus limborum			Diff. a vertice vera lim- borum			Diam. app. Solis		Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II	G	I	II
Nov. 17	sereno Serangelus	202238 197647	63.41.21			63.43.11			31.38		63.27.22		
Nov. 21	specie languida	210876 205938	64.37.45			64.39.40			31.50		64.23.45		
Nov. 23	Sole claro	215035 209938	65. 3.35			65. 5.32			31.49		64.49.33		
Nov. 26	cælo sereno	221038 215698	65.39.24			65.41.26			31.50		65.23.31		
Nov. 27	ut supra	223002 217546	65.50.23			65.52.26			31.41		65.36.35		
Nov. 28	cælo sereno	224895 219349	66. 0.40			66. 2.43			32.10		65.47.38		
Nov. 29	ut supra	226773 221128	66.12.14			66.14.18			32.17		65.58. 9		
Dec. 11	Obs. dubia, quod limbi infer. radii testis imbricæ fringeret	244329 237922	67.44.30			67.46.44			32.24		67.30.32		
Dec. 14	sereno, amoto imbrice	246975 240431	67.57.26			67.59.42			32.30		67.43.27		
Dec. 18	sereno	249204 242596	68. 8. 8			68.10.25			32.19		67.54.15		
Dec. 19	sereno	249523 242909	68. 9.11			68.11.28			31.46		67.55.35		
Dec. 21	claro. Obs. Thom. Perellus Floren. M.D. cum Serangelo, qui paullo post ex acuta febris diem obiit 30 Decembris	249888 243283	68.11.23			68.13.40			32. 7		67.57.37		
1736													
Jan. 4	Obs. Petrus Lilius Venetus J. U. D.	241439 235261	67.30. 5			67.32.17			31.50		67.16.22		

Jan.

		<i>Tangen-</i> <i>tes cor-</i> <i>re dia</i> <i>a ape-</i> <i>numbra</i>	<i>Diff.</i> <i>a vertice</i> <i>apparentis</i> <i>limborum</i>	<i>Diff.</i> <i>a vertice</i> <i>vera lim-</i> <i>borum</i>	<i>Diam.</i> <i>app.</i> <i>Solis</i>	<i>Diff.</i> <i>a vertice</i> <i>vera cen-</i> <i>tri</i>
			G I II	G I II	I II	G I II
1736						
Jan. 7	Lilius	237436 231415	67. 9.40 66.37.47	67.11.50 66.39.54	31.56	66.55.52
Jan. 8		235962 229971	67. 1.59 66.29.55	67. 4. 8 66.32. 1	32. 7	66.48. 4
Jan. 20		213870 208802	64.56.26 64.24.33	64.58.23 64.26.27	31.56	64.42.25
Jan. 21	claro	211778 206795	64.43.25 64.11.35	64.45.20 64.13.27	31.53	64.29.23
Jan. 22		209656 204750	64.30. 1 63.58. 9	64.31.55 64. 0. 0	31.55	64.15.57
Feb. 8		172131 168550	59.50.44 59.19. 0	59.52.17 59.20.31	31.46	59.36.24
Feb. 13		161483 158323	58.13.54 57.43.22	58.15.21 57.44.47	30.34	58. 0. 4
Feb. 15	nubilo	157284 154096	57.33. 8 57. 1. 7	57.34.32 57. 2.29	32. 3	57.18.30
Feb. 19	claro	149104 146133	56. 9. 5 55.36.57	56.10.24 55.38.14	32.10	55.54.19
Feb. 25	claro	137527 134885	53.58.41 53.26.53	53.59.53 53.28. 4	31.49	53.43.59
Feb. 27	claro	133806 131278	53.13.38 52.42. 7	53.14.48 52.43.16	31.32	52.59. 2
Feb. 29	claro	130227 127779	52.28.47 51.57.12	52.29.56 51.58.20	31.36	52.14. 8
Mar. 1	claro	128477 126035	52. 6.17 51.34.14	52. 7.25 51.35.20	32. 5	51.51.22
Mar. 6	claro	119945 117713	50.10.54 49.39. 5	50.11.57 49.40. 7	31.50	49.56. 2
Mar. 10	Sole claro	113514 111421	48.37.18 48. 5.32	48.38.17 48. 6.30	31.47	48.22.23

Ccc 2

Mar.

1736		Tangen tes cor- re & a p numbra	Diff. a vertice apparens limborum			Diff. a vertice vera lim borum			Diam. app. solis			Diff. a vertice vera cen- tri		
			G	I	II	G	I	II	I	II		G	I	II
Mar. 15	claro. Lilius	105932 104013	46.39. 0 46. 7.37			46.39.55 46. 8.31			31.24			46.24.13		
Mar. 26	claro	91027 89366	42.18.39 41.47.11			42.19.27 41.47.58			31.29			42. 3.42		
Mar. 27	claro	89790 88145	41.55.15 41.23.42			41.56. 3 41.24.29			31.34			41.40.16		
Mar. 28	claro	88571 86944	41.31.55 41. 0.19			41.32.42 41. 1. 5			31.37			41.16.53		
Mar. 30	claro	86180 84594	40.45.18 40.13.20			40.46. 3 40.14. 4			31.59			40.30. 4		
Apr. 1	Paschæ	83857 82306	39.38.40 39.27.12			39.39.23 39.27.55			31.28			39.43.39		
Apr. 6	nubilo	78346 76921	38. 4.33 37.34.42			38. 5.14 37.35.22			29.52			37.50.18		
Apr. 8	claro	76277 74837	37.20. 8 36.48.30			37.20.48 36.49. 8			31.40			37. 4.58		
Apr. 9	claro	75248 73851	36.57.40 36.26.47			36.58.19 36.27.25			30.54			36.42.52		
Apr. 13	claro	71340 69960	35.30.15 34.58.37			35.30.51 34.59.12			31.39			35.15. 1		
Apr. 14	claro	70390 69024	35. 8.31 34.36.55			35. 9. 6 34.37.30			31.36			34.53.18		
Apr. 17	claro	67649 66322	34. 4.44 33.33.12			34. 5.18 33.33.46			31.32			33.49.32		
Apr. 18	nubilo	66753 65464	33.43.29 33.12.39			33.44. 3 33.13.12			30.51			33.28.58		
Apr. 19	claro	65887 64597	33.22.48 32.51.41			33.23.22 32.52.14			31. 8			33. 7.48		
Apr. 20	claro	65042 63750	33. 2.28 32.31. 3			33. 3. 1 32.31.35			31.26			32.47.18		

Apr.

1736		Tangen- ti corre- ctæ a pe- numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G I II	G I II	G I II	G I II	G I II
Apr. 21	claro	64193 62924	32.41.53 32.10.48	32.42.25 32.11.20	31. 5	32.27.52
Apr. 22	claro	63370 62105	32.21.46 31.50.33	32.22.18 31.51. 5	31.13	32. 7.41
Apr. 23	claro	62562 61303	32. 1.53 31.30.35	32. 2.25 31.31. 6	31.19	31.47.46
Apr. 24	nubilo	61744 60545	31.41.35 31.11.35	31.42. 6 31.12. 5	30. 1	31.27. 6
Apr. 25	nubilo	60976 59783	31.22.24 30.52.21	31.22.55 30.52.52	30. 3	31. 7.54
Apr. 27	nubilo	59437 58242	30.43.34 30.13. 4	30.44. 4 30.13.33	30.31	30.28.48
Maj. 1	claro	56585 55417	29.30.13 28.59.40	29.30.41 29. 0. 7	30.34	29.15.24
Maj. 5	Sole claro	53919 52765	28.20. 0 27.49. 6	28.20.26 27.49.31	30.55	28. 4.58
Maj. 7	claro	52672 51523	27.46.38 27.15.34	27.47. 4 27.15.59	31. 5	27.31.31
Maj. 8	claro	52071 50930	27.30.24 26.59.25	27.30.59 26.59.50	31. 9	27.15.24
Maj. 11	claro	50346 49220	26.43.25 26.12.24	26.43.50 26.12.48	31. 2	26.28.19
Maj. 12	claro	49799 48678	26.28.24 25.57.22	26.28.48 25.57.46	31. 2	26.13.17
Maj. 13	clarissimo	49254 48149	26.13.20 25.42.39	26.13.44 25.43. 3	30.41	25.58.23
Maj. 14	clarissimo	48750 47621	25.59.22 25.27.52	25.59.46 25.28.16	31.30	25.44. 1

Maj.

1736		Tangen- tes cor- re- ctæ a pe- numbra	Diff. a vertice apparentis limborum			Diff. a vertice vera lim- borum			Diam. app. Solis	Diff. a vertice vera cen- tri		
			G	I	II	G	I	II		G	I	II
Maj. 16	pallido Lilius	47723 46635	25.30.44	25.0.9		25.31.6	25.0.32		30.34	25.15.49		
Maj. 18	claro	46774 45685	25.4.4	24.33.12		25.4.27	24.33.35		30.52	24.49.1		
Maj. 19	pallido	46322 45234	24.51.18	24.20.23		24.51.41	24.20.46		30.55	24.36.13		
Maj. 20	pallido	45878 44794	24.38.42	24.7.47		24.39.5	24.8.9		30.56	24.23.37		
Maj. 22	pallido	45021 43957	24.14.18	23.43.45		24.14.40	23.44.7		30.33	23.59.23		
Maj. 23	pallidissimo	44597 43559	24.2.9	23.32.16		24.2.31	23.32.38		29.53	23.47.34		
Maj. 24	claro	44244 43178	23.52.0	23.21.15		23.52.22	23.21.37		30.45	23.36.59		
Maj. 26	clarissimo	43502 42446	23.30.38	22.59.58		23.31.0	23.0.19		30.41	23.15.40		
Maj. 27	claro	43161 42096	23.20.45	22.49.46		23.21.6	22.50.7		30.59	23.5.37		
Maj. 28	clarissimo	42831 41770	23.11.12	22.40.15		23.11.33	22.40.36		30.57	22.56.5		
Maj. 29	pallido	42512 41448	23.1.53	22.30.48		23.2.14	22.31.8		31.6	22.46.41		
Maj. 30	claro	42195 41148	22.52.39	22.22.1		22.52.59	22.22.21		30.38	22.37.40		
Maj. 31	clarissimo	41905 40850	22.44.11	22.13.13		22.44.32	22.13.33		30.59	22.29.3		
Jun. 1	clarissimo	41627 40577	22.36.4	22.5.11		22.36.24	22.5.31		30.53	22.20.57		
Jun. 2	pallido	41361 40313	22.28.15	21.57.22		22.28.35	21.57.42		30.53	22.13.8		

Jun.

1736		Tangen tes cor- de a pe- numbra	Diff. a vertice apparenti limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	II	I	II
Jun. 3	pallido	41105 40065	22.20.45 21.50.0	22.21.5 21.50.20	30.45	22.5.42
Jun. 6	clarissimo	40631 39618	22.6.46 21.36.46	22.7.6 21.37.6	30.0	21.52.6
Jun. 9	clarissimo	39880 38849	21.44.33 21.13.52	21.44.53 21.14.12	30.41	21.29.32
Jun. 10	clarissimo	39730 38689	21.40.6 21.9.4	21.40.26 21.9.24	31.2	21.24.55
Jun. 12	clarissimo	39450 38420	21.31.45 21.1.0	21.32.5 21.1.20	30.45	21.16.42
Jun. 13	clarissimo	39337 38300	21.28.23 20.57.25	21.28.43 20.57.45	30.58	21.13.14
Jun. 14	clarissimo	39231 38208	21.25.15 20.54.40	21.25.35 20.55.0	30.55	21.10.17
Jun. 15	clarissimo	39147 38110	21.22.32 20.51.42	21.22.52 20.52.2	30.50	21.7.27
Jun. 16	clarissimo	39080 38041	21.20.46 20.49.39	21.21.6 20.49.59	31.7	21.4.32
Jun. 17	pallidissimo	39009 37994	21.18.36 20.48.13	21.18.56 20.48.33	30.23	21.3.44
Jun. 19	clarissimo	38940 37904	21.16.35 20.45.15	21.16.55 20.45.35	31.20	21.1.15
Jun. 20	clarissimo	38922 37892	21.16.0 20.45.9	21.16.20 20.45.29	30.51	21.0.55
Jun. 21	claro	38918 37897	21.15.54 20.45.18	21.16.14 20.45.38	30.36	21.0.56
Jun. 22	clarissimo	38940 37908	20.16.33 20.45.38	20.16.53 20.45.58	30.55	21.1.25
Jun. 23	clarissimo	38950 37917	21.16.50 20.45.55	21.17.10 20.46.15	30.55	21.1.42

Jun.

1736		Tangen tes cor- re- ctæ a pe- numbra	Diff. a vertice apparenti limborum.	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
		G	I	II	I	II
Jun. 28	claro Lilius	39186 38246	21.26.53 20.55.50	21.27.13 20.56.10	31. 3	21.11.41
Jun. 29	clarissimo	39379 38354	21.29.38 20.59. 2	21.29.58 20.59.22	30.36	21.14.40
Jun. 30	clarissimo	39495 38471	21.33. 5 21. 1.33	21.33.25 21. 2.53	30.32	21.18. 9
Jul. 1	claro	39624 38604	21.36.56 21. 6.30	21.37.16 21. 6.50	30.26	21.22. 3
Jul. 2	clarissimo	39784 38746	21.41.42 21.10.48	21.42. 2 21.11. 8	30.54	21.27.35
Jul. 3	pallido	39938 38917	21.46.16 21.15.53	21.46.36 21.16.13	30.23	21.31.25
Jul. 4	clarissimo	40115 39082	21.51.31 21.20.50	21.51.51 21.21.10	30.41	21.36.30
Jul. 7	clarissimo	40729 39687	22. 9.39 21.38.49	22.10. 0 21.39. 9	30.51	21.54.54
Jul. 8	clarissimo	40958 39916	22.16.23 21.45.37	22.16.44 21.45.58	30.46	22. 1.21
Jul. 10	claro	41450 40405	22.30.51 22. 0. 6	22.31.12 22. 0.27	30.45	22.15.49
Jul. 11	pallido	41734 40674	22.39.11 22. 8. 1	22.39.33 22. 8.22	31.11	22.23.57
Jul. 14	claro	42622 41561	23. 5. 5 22.34. 5	23. 5.26 22.34.26	31. 0	22.49.56
Jul. 15	clarissimo	42947 41874	23.14.32 22.43.16	23.14.53 22.43.37	31.16	22.59.15
Jul. 16	clarissimo	43274 42217	23.24. 0 22.53.18	23.24.21 22.53.39	30.42	23. 8.50
Jul. 17	claro	43633 42564	23.34.23 23. 3.25	23.34.44 23. 3.46	30.58	23.19.15

Jul.

1736		Tangen tes cor- re et a pe- numbra	Diff. a vertice appareus limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G ° ' "	G ° ' "	1 "	G ° ' "
Jul. 18	clarissimo	43993 42922	23.44.46 23.13.50	23.45. 8 23.14.11	30.57	23.29.39
Jul. 20	clarissimo	44769 43689	24. 7. 4 23.36. 0	24. 7.26 23.36.22	31. 4	23.51.54
Jul. 23	clarissimo	46014 44930	24.42.33 24.11.41	24.42.56 24.12. 3	30.53	24.27.29
Jul. 24	clarissimo	46456 45372	24.55. 3 24.24.17	24.55.26 24.24.40	30.46	24.40. 3
Jul. 28	clarissimo	48372 47261	25.48.52 25.17.46	25.49.16 25.18. 9	31. 7	25.33.42
Jul. 29	claro	48888 47779	26. 3.12 25.32.17	26. 3.36 25.32.41	30.55	25.48. 8
Jul. 30	claro	49406 48278	26.17.31 25.46.13	26.17.55 25.46.37	31.18	26. 2.16
Jul. 31	claro	49944 48817	26.32.23 26. 1.13	26.32.48 26. 1.37	31.11	26.17.12
Aug. 3	pallido	51620 50494	27.18.10 26.47.29	27.18.36 26.47.54	30.42	27. 3.15
Aug. 4	claro	52197 51080	27.33.49 27. 3.28	27.34.15 27. 3.53	30.22	27.19. 4
Aug. 13	clarissimo	58110 56901	30. 9.40 29.38.26	30.10. 9 29.38.55	31.14	30. 4.32
Aug. 14	clarissimo	58838 57629	30.28.19 29.57.17	30.28.48 29.57.46	31. 2	30.13.17
Aug. 15	clarissimo	59577 58353	30.47. 8 30.15.54	30.47.38 30.16.23	31.15	30.32. 0
Aug. 16	claro	60339 59101	31. 6.18 30.35. 1	31. 6.48 30.35.31	31.17	30.51. 9
Aug. 17	clarissimo	61099 59858	31.25.29 30.54.14	31.25.59 30.54.44	31.15	31.10.21

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Aug.

1736		Tangen tes corre ctæ a pe numbra	Diff. a vertice apparens limborum	Diff. a vertice vera lim borum	Diam. app. Solis	Diff. a vertice vera cen tri
		G I II	G I II	I II	G I II	
Aug. 25	clarissimo Lilius	67712 66398	34. 6.10 33.35. 0	34. 6.44 33.35.33	31.11	33.51. 8
Aug. 29	pallido	71362 70010	35.30.45 34.59.46	35.31.21 35. 0.21	31. 0	35.15.51
Aug. 31	claro	73286 71888	36.14.11 35.42.42	36.14.48 35.43.18	31.30	35.59. 3
Sept. 4	pallidissimo	77266 75875	37.41.31 37.11.22	37.42.11 37.12. 1	30.10	37.27. 6
Sept. 12	clarissimo , & tremulo	86077 84493	40.43.16 40.11.44	40.44. 1 40.12.29	31.32	40.28.15
Sept. 14	pallidissimo	88394 86855	41.28.30 40.58.34	41.29.17 40.59.20	29.57	41.14.18
Sept. 15	clarissimo, & tremulo	89633 88018	41.52.16 41.21.14	41.53. 4 41.22. 1	31. 3	41.37.32
Sept. 16	ut supra	90843 89216	42.15.11 41.44.17	42.15.59 41.45. 4	30.55	42. 0.31
Sept. 17	pallido, & parum tremulo	92075 90448	42.38.15 42. 7.44	42.39. 4 42. 8.32	30.32	42.23.48
Sept. 18	clarissimo, & tremulo	93349 91672	43. 1.43 42.30.44	43. 2.31 42.31.32	30.59	42.47. 2
Sept. 19	ut supra	94636 92921	43.25.17 42.53.56	43.26. 7 42.54.45	31.22	43.10.26
Sept. 20	ut supra	95966 94194	43.49.14 43.17.16	43.50. 4 43.18. 5	31.59	43.34. 5
Sept. 21	pallido	97248 95509	44.12. 3 43.41. 3	44.12.54 43.41.53	32. 1	43.57.23
Sept. 23	clarissimo, & tremulo	99961 98150	44.59.21 44.27.55	45. 0.13 44.28.46	31.27	44.44. 0
Sept. 24	pallido	101339 99504	45.22.52 44.51.28	45.23.45 44.52.20	31.25	45. 8. 3

Sept.

1736		Tangen- tes cor- re a pe- numbra	Diff.	Diff.	Diam.	Diff.
			a vertice apparens limborum	a vertice vera lim- borum	app. Solis	a vertice vera cen- tri
			G I II	G I II	I II	G I II
Sept. 26	pallido	104160 102259	46.10. 3 45.38.24	46.10.57 45.39.17	31.40	45.55. 7
Sept. 29	pallido	108529 106527	47.20.33 46.48.37	47.21.30 46.49.32	31.58	47. 5.31
Sept. 30	clarissimo, & tremulo	110028 107992	47.44. 1 47.12. 3	47.44.58 47.12.59	31.59	47.28.59
Oct. 1	ut supra	111520 109487	48. 7. 3 47.35.36	48. 8. 1 47.36.33	31.28	47.52.17
Oct. 3	claro	114602 112513	48.53.34 48.22.12	48.54.34 48.23.11	31.23	48.38.53
Oct. 4	clarissimo, & tremulo	116172 114055	49.16.43 48.45.24	49.17.44 48.46.33	31.11	49. 2. 8
Oct. 6	ut supra	119390 117187	50. 3. 4 49.31.30	50. 4. 7 49.32.32	31.35	49.48.19
Oct. 9	ut supra	124364 122078	51. 1. 8 50.40.39	51.12.13 50.41.43	30.30	50.56.58
Oct. 13	ut supra	131282 128837	52.42.11 52.10.57	52.43.21 52.12. 5	31.16	52.27.43
Oct. 20	pallido	144209 141350	55.15.41 54.43.19	55.16.57 54.44.33	32.24	55. 0.45
Oct. 21	claro	146141 143311	55.37. 5 55. 5.37	55.38.22 55. 5.52	32.30	55.22. 7
Oct. 22	clarissimo, & tremulo	148106 145215	55.58.19 55.26.50	55.59.38 55.28. 7	31.31	55.43.52
Oct. 23	ut supra	150092 147144	56.19.35 55.48. 0	56.20.55 55.49.18	31.37	56. 5. 6
Oct. 24	ut supra	152144 149085	56.41. 3 56. 8.53	56.42.24 56.10.12	32.12	56.26.18
Oct. 25	ut supra	154151 151073	57. 1.41 56.29.53	57. 3. 3 56.31.13	31.50	56.47. 8

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Oct.

1736		Tangen- tes cor- dæ a pe- numbra	Diff. a vertice apparent limborum	Diff. a vertice vera lim- borum	Diam. app. Solis	Diff. a vertice vera cen- tri
			G 1 "	G 1 "	1 "	G 1 "
Nov. 30	clarissimo, & tremulo	229876 224150	66.29.25 65.57.25	66.31.31 65.59.28	32. 3	66.15.29
Dec. 2	ut supra	233257 227366	66.47.40 66.15.33	66.49.47 66.17.37	32.10	66.33.42
Dec. 5	ut supra	237852 231754	67.11.57 66.39. 5	67.14. 7 66.41.11	32.56	66.57.49
Dec. 8	claro	241778 235568	67.31.48 66.59.55	67.34. 1 67. 2. 4	31.57	67.18. 2
Dec. 9	clarissimo, & tremulo	242937 236674	67.37.36 67. 5.41	67.39.48 67. 7.50	31.58	67.23.49
	ut supra	245044 238636	67.48. 1 67.15.51	67.50.15 67.18. 1	32.14	67.34. 8
Dec. 12	claro	245944 239505	67.52.25 67.20.17	67.54.40 67.22.28	32.12	67.38.34
Dec. 22	claro	249893 243219	68.11.26 67.39. 0	68.13.43 67.41.14	32.29	67.57.29
Dec. 23	clarissimo, & valde tremulo	249715 243045	68.10.34 67.38. 8	68.12.51 67.40.22	32.29	67.56.37
Dec. 24	ut supra	249440 242821	68. 9.16 67.37. 1	68.11.33 67.39.14	32.19	67.55.24
Dec. 25	ut supra	249108 242478	68. 7.40 67.35.17	68. 9.56 67.37.30	32.26	67.53.43
Dec. 26	ut supra	248627 242053	68. 5.21 67.33.20	68. 7.37 67.35.32	32. 5	67.51.34
Dec. 27	pallidissimo	248132 241605	68. 3. 0 67.30.55	68. 5.16 67.33. 7	32. 9	67.49.11
Dec. 28	clarissimo	247473 240954	67.59.50 67.27.39	68. 2. 6 67.29.51	32.15	67.45.58
Dec. 29	ut supra	246774 240241	67.58.24 67.24. 2	67.58.40 67.26.13	32.27	67.42.27

F I N I S .

Vidit D. Jo: Hieronymus Gazoni Visitator Generalis Clericor. Regular. S. Pauli, & in Ecclesia Metropolitana Bononiz Pœnitent. pro Eminentissimo, ac Reverendissimo Domino D. Prospero Cardinali de Lambertinis Archiepiscopo Bononiz, & Sac. Rom. Imp. Principe.

Ad Illustrissimum, & Excellentissimum D. Hieronymum Hilarium Chierici Publicum Theologiz Professore, ut videat & referat pro S. Officio

F. Pius Cajetanus Cadolini Vic. Gen. S. Officii Bononia.

VEre effatum est antiquorum: Ab ungue Leonem. Talem se in hoc opere exhibet celeberrimus Vir Eustachius Manfredi in hoc Archigymnasio publicus Astronomiz Professor; diu propterea est, & maximè dignum, quod przlo mandetur - ... censeo, si tamen placuerit Reverendissimo Patri hac die 31 mensis Julii anni 1736.

Hieronymus Hilarius à Clerico S. Theol. Doct. Colleg. Lest. publ. &c.

31 Julii 1736

Stante przmissa attestatione

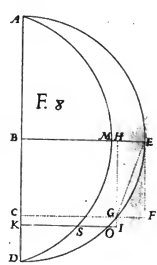
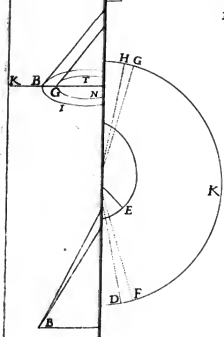
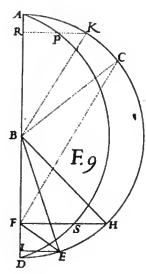
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